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Energy Sovereignty in Marine Spaces

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Abstract

The term energy sovereignty is used with differing emphases to describe a State's rights or assertions over energy resources and supplies. Given the importance of offshore energy developments, particularly in the field of renewables, this article explores the meaning of energy sovereignty, arguing that more complex, cooperative approaches towards sovereignty are required in order to adapt to the nature of energy and energy demands. This approach is particularly important in the context of marine resources, where there is shown to be a carefully crafted balancing of interests between coastal States, third State and community interests. The article further suggests that in order to help explain energy sovereignty against this complex background, recourse may be had to theories of justification of ownership of resources. The example of natural rights based approaches is used to show how this can inform the direction that legal regimes might take.

Keywords

energy □ sovereignty □ sovereign rights □ marine renewables

Introduction

Significant deposits of oil and gas are known to exist under the world's oceans. New deposits are still being discovered or rendered accessible through new or more efficient technologies. More recently, the oceans have become the principal focus for developments in the field of renewable energy with the growth in offshore wind farms. Invariably, energy resources will be shipped by sea, or transmitted through undersea pipelines and cables. The exploration, production and supply of energy from the sea has had an impact on all other oceans' activities. This means that marine spaces are at the heart of debates about meeting the world's energy demands, and that international law of the sea is at the heart of debates about how such demands are met and balanced against other ocean uses. Much of this debate is framed in terms of energy sovereignty, which raises questions about the extent to which States, both individually and collectively, can and should be able to secure their energy supply needs, and how this will operate in practice. This article explores some of the preliminary issues that arise from claims about energy sovereignty in respect of marine resources. This is important because as calls for energy sovereignty grow in frequency and force, they must be reconciled with well-established

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rules and values concerning the way in which sovereignty operates, and must adapt to the particular physical conditions in which marine energy resources are located.

The article begins by analysing the meaning of "energy sovereignty", breaking it down into its component parts: energy and sovereignty. It argues that if we are to regulate energy, then this must accord with the physical properties of energy, and in particular adapt to a more nuanced understanding of the distinction between energy resources and energy use. A fuller understanding of energy opens up opportunities to re-imagine the way we regulate energy, or at least properly conceptualise the way in which we regulate energy. This is particularly important in the context of marine renewables (wind/tidal energy), where the resource is not exclusive, or spatially located but is subject to uncontrolled natural variables, all of which present challenges for existing legal approaches. The article then considers how sovereignty can be conceptualised, and suggests that relative accounts of sovereignty are better suited to the realities of energy use and the practice of States. This analysis of energy and sovereignty is then put into context in the next part which outlines how debates about energy sovereignty have developed. The article shows that multilateral agreements do not appear to say much, at least directly, about energy sovereignty as it pertains to the complexities of energy supply and use. However, there is a broader network of international rights and obligations that directly and indirectly impact on energy use, and which constrain more self-interested approaches towards the control of energy resources. Indeed, in some marine spaces States exercise sovereign rights or jurisdiction which are forms of authority more heavily qualified by requirements to exercise due regard to the interests of other States. This suggests that it is difficult to sustain claims to energy sovereignty based purely upon securing national interests. If a more nuanced approach to energy sovereignty is adopted, then this will require further analysis.The final part of the article begins this analysis by exploring the more fundamental justifications for control over resources. Typically, such justifications are framed in terms of good order or as calls for the redistribution of wealth. This compares poorly to justifications of property. Since energy sovereignty is essentially concerned with questions of who can control energy resources and supplies, the extent of such authority and any limits on this, i.e. exclusive control, justifications framed in terms of ownership might better inform debates about the meaning of energy sovereignty. Some of the implications of this approach are highlighted through examples drawn from natural rights-based approaches to property. The questions that even one such approach might generate suggest that much more research is needed to develop a meaningful understanding of 'energy sovereignty'.

Defining Energy and Sovereignty

Energy

If we are to talk meaningfully about energy sovereignty then it is necessary to understand the object of sovereignty. What is energy? This is not an easy question to answer, especially for a non-scientist. It can be regarded as an abstract scientific construct used to interpret aspects of reality. Yet it may also be observed and measured. In either case, there are aspects of energy that are not fully understood or explicable. As a noted physicist has observed: "It is important to realize that in physics today, we have no knowledge of what energy *is*". [2] A provocative remark,

[2] R.P. Feynman, R.B. Leighton and M. Sands, *The Feynman Lectures on Physics* (Basic Books, New York, 2011) vol. I, sections 4-1. - 4-8.

it should signal the fact that knowledge is contingent and changeable, and this needs to be factored into regulatory regimes.

To help frame the present discussion, energy can be defined as the power derived from the utilisation of physical or chemical resources. It is a property that a system possesses and can be used to do work. This is done by transferring energy from one object or system to another, for example, by burning fuel to produce heat, or converting kinetic energy from water into electricity. Scientists tell us that energy may take a variety of forms: electrical, light, elastic, kinetic, sound, thermal, chemical, gravitational and nuclear energy. These are generally reduced to potential or kinetic forms of energy. Each of these forms of energy may be stored, accessed and used in different ways depending upon its physical properties, location and the state of technology. Since energy has properties that determine how it can be used, these factors must be taken into account in the design of any regulatory regime. This applies to both specific rules and broad principles such as sovereignty. Thus is a particular resource or form of energy is not exclusively located within a State, then it is generally not susceptible to claims of sovereignty.

The physical properties of an energy resource determine the how it may be regulated. For example, sunlight (solar energy) is ubiquitous and results in approximately 170,000 terawatts of energy being delivered to the earth each day.[3] To highlight its potential for meeting energy demands, the IEA reports that it 'takes the sun one hour and 25minutes to send us the amount of energy we current consume in a year."[4] It is fungible, non-exclusive and intangible. It warms the earth to levels that are conducive to life. It is essential to the sustenance of life through photosynthesis. It provides a source of renewable energy. As a general category or source of energy, these factors render it a common resource; it cannot be possessed or rendered excludable, either by way of sovereign claims or individual ownership. This would be physically impossible, but also morally objectionable because it would deprive non-owners or persons without access of the means to an essential good. Of course this general proposition admits qualifications since some limited absence of light may result from other factors, such as building shade.[5]

Another example is wind energy. Wind is the movement of air across the surface of the earth as denser cool air moves to fill space in low pressure areas that is occupied by warm air. This movement is the product of differences or changes in air pressure, which are in turn the result of thermal changes and the rotation of the earth. Wind stores kinetic energy which may be capture through wind turbines, which convert the energy into electrical or mechanical energy. Global potential for wind energy is estimated to be around 72 terawatts.[6] Wind performs a critical function in natural weather systems. It provides a renewable source of energy. It is also intangible, fungible and non-exclusive, so like sunlight is a common resource. In the case of sunlight and wind, the energy may be captured at fixed points and this takes energy out of the natural system. This may allow for regulation under the 'law of capture' within individual

[3] D.J. Rose, *Learning About Energy* (Plenum Press, New York, 1986) at p. 71.
[4] International Energy Agency, *Solar Energy Perspectives* (IEA Publications, Pairs, 2011) at p. 32
[5] Most legal systems have developed localized rules concerning rights to light in this context. See the Law Commission, *Rights to Light.* Law Commission Consultation Paper 210 (2013). Available at http://lawcommission.justice.gov.uk/docs/cp210_rights_to_light_version-web.pdf
[6] C.L. Archer and M.Z. Jacobsen, 'Evaluation of Global Wind Power' (2005) 110 *Journal of Geophysical Research* Atmospheres D12110. However, such figures are subject to considerable debate. See C. de Castro *et al.,* 'Global Wind Power Potential: Physical and Technological Limits' (2011) 39 Energy Policy 6677-6682.

States.[7] However, this may fail to account for important externalities. In the case of wind energy, capture subtracts from downstream users.[8] Wind flow is distorted or reduced when passing through a turbine, leaving less kinetic energy for capture by other users.[9] Accordingly, some element of collective or cooperation regulation between States will be required. The examples of renewable energy may be contrasted with spatially fixed, tangible, finite sources of energy like coal or oil.[10] These are excludable and frequently reduced to State or private ownership, at least when located exclusively within a single State. However, even in these cases, the use of such resources will produce externalities (e.g. transboundary pollution) that entail some degree of collective regulation.

The physical attributes of energy may also impact upon the way in which it is regulated in less obvious, but equally important way. It is a fundamental law of physics that energy cannot be created from nothing or destroyed. Energy can only be transformed from one state to another. This is known as the law of the conservation of energy (or the first law of thermodynamics) and it raises some interesting questions about the nature of energy and our use of it. First, it may be observed that energy production is focused on the generation of high quality energy (energy that can do meaningful work). As such, we are concerned with transforming energy resources into particular types of energy (e.g., electrical energy). Secondly, this in turn raises questions about whether or not it is meaningful to talk in terms of 'energy sovereignty'. It is a fact of nature that we cannot control energy absolutely, but merely its potential at certain points in time or space. And even this is technologically contingent. If energy is not consumed but merely changes state then is it possible to exert sovereignty over energy per se? Rather it seems more useful to talk about control not of energy, but of control over the opportunities to change its state. At the very least, this attribute of energy suggests that its use will generate consequences beyond the scope of an individual agent's ability to control. Such externalities might include the uncontrolled dissipation of energy from industrial power generation, or the creation of by-products which the State is unable to handle, or pecuniary costs by others that suffer the consequences an energy use activity. If this is true, then sovereignty, narrowly construed in terms of exclusive power over a resource seems to be a limited framework for control. Instead we ought to consider control over energy being defined in much more nuanced way terms that reflect its natural qualities and consequences of its use.

A second factor – the location of an energy resource - may determine aspects of its regulation. For example, fossil fuels are physically located in fixed positions in the ground or seabed. Their fixed location determines the spatial parameters for extraction activities and may determine which States(s) can control extraction. On land, such resources are normally subsumed within the doctrine of territorial sovereignty and are at the host State's disposal, at least when they are located wholly within that State's territory. As indicated above, transboundary deposits of oil and gas require cooperative arrangements in order to facilitate exploitation since they cannot be exploited without impacting upon other State's territorial

[7] See generally, T. Daintith 'The Rule of Capture. The Least Worst Property Rule for Oil and Gas' in A. McHarg, B. Barton, A. Bradbrook and L. Godden (eds.), *Property and the Law in Energy and Natural Resources* (Oxford University Press, Oxford, 2010) 140-159.

[8] See Y. Lifshitz-Goldberg, 'Gone with the Wind? The Potential Tragedy of the Common Wind' (2010) 28 *UCLA Journal of Environmental Law and Policy* 435-71, at pp. 455-61.

[9] This has already been the subject of litigation in Norway. See Norwegian Supreme Court decision of 27 May 2011. *Norsk Retstidende* 2011, p. 780, reported in K. Lilleholt, 'Wind Power, Ownership, and Neighbours' (2012) 20 *European Review of Private Law* 1159-63.

[10] The contrast with oil is perhaps more equivocal given the rule of capture. See Daintith (n 7).

rights.[11] Deposits of oil or gas within marine areas are subject to a degree of exclusive control when located in the EEZ or continental shelf. However, such spaces are subject to additional restrictions that protect the interests of other States or the international community.[12] Location is important to questions of energy supply and transmission. Since energy resources are unevenly distributed and frequently dislocated from places where the resources are needed, energy or raw materials must be transported around the world. Raw materials for energy production (coals and oil) must be transported to centres of industry, often by sea. Gas must be piped from production facilities to storage sites and end users. Again this may be through undersea pipelines. The same applies to the transmission of electricity through power lines that link energy generators and users. This requires the creation of resilient energy systems or networks that can ensure supplies of energy. Such networks cannot be created by individual States but require the cooperation of supply-States, user-States and States of transit – hence the priority afforded to energy transit in the Energy Charter Treaty.[13] These regimes require laws that facilitate the creation and maintenance of energy supplies. Thus, location reinforces the point that more nuanced versions of sovereignty or control are required to adapt to the essential attributes of different energy resources.

The third factor influencing energy regulation is the state of technology. Technology impacts on our ability to access and use certain resources. For example, offshore oil and gas exploration only emerged in the 20th century with the development of technology that allowed oil and gas to be captured. Prior to this international law had limited concern for the question of control over offshore mineral resources. However, as the capacity to engage in offshore oil and gas activities pushed out to sea and could occur at greater depths, so the law had to adapt to this new reality. Accordingly, the regime of the continental shelf emerged. This function of technology was explicitly acknowledged in the reference to exploitability in determining the outer limits of the legal continental shelf.[14] The outward reach of energy activities will continue with the vast potential of methane hydrate deposits on the deep seabed likely to generate new regulatory challenges in the Area.[15] In the context of wind energy, limitations in storage technology present the most significant obstacles to renewable energy development. Electricity generated can be directed into electricity grids but cannot readily be conserved for use on demand. It must either be rejected or diverted. More sophisticated networks may allow for the diversion of surplus energy between States, but will require cooperation between States to manage fluctuations in supply and demand.[16]

In summary, if we are concerned with the regulation of energy, then we should be concerned with both the control of the sources of energy and processes whereby energy is transformed from one state to another. We also need to be aware of the way in which the nature of energy resources and use shape regulation. As will be demonstrated in the next section, a

[11] See W.T. Onorato, 'Apportionment of an International Common Petroleum Deposit' (1967) 17 *International and Comparative Law Quarterly (ICLQ)* 85-102, and 'Apportionment of an International Common Petroleum Deposit' (1977) 26 *ICLQ* 324-337; D. Ong, 'Joint Development of Common Offshore Oil and Gas Deposits: "Mere" State Practice or Customary International Law?' (1999) 93 *American Journal of International Law* (*AJIL*) 771-804.

[12] See below at 00. Cross reference to page of journal

[13] See below 00. Insert cross reference to page of journal

[14] Article 1 of the 1958 Convention on the Continental Shelf (Geneva 29 April 1958, entry into force 10 June 1964) 499 *UNTS* 311.

[15] See R.S. Santos, T. Morato and F.J.A.S. Barriga, 'Increasing Pressure at the Bottom of the Ocean' in A. Mendonca, A. Cunha and R. Chakrabarti (eds.), *Natural Resources, Sustainability and Humanity. A Comprehensive View* (Springer, Dordrecht, 2012) 69-81, at p. 75.

[16] See T. Ackermann (ed.) *Wind Power in Power Systems* (Wiley, Chichester, 2012), chapters 21 and 22.

narrow view of sovereignty, drawn in terms of exclusive control over energy resources, does appear to be suited to these essential considerations. This suggests that questions of energy resource control and use require more nuanced accounts of sovereignty. Or in other words it supports a functional approach to sovereignty.[17] As discussed below, there is some recognition of the different qualities of energy in legal instruments, such as the reference to 'energy cycle' and transit provisions in the Energy Charter Treaty. Indeed, a quick survey of such international instruments supports the point that cooperative and nuanced approaches to sovereignty are required to addresses questions of energy use.

Observations on Sovereignty

It is trite but nonetheless true to observe that sovereignty is a controversial and contested principle. It is an intellectual construct that may be analysed from a variety of perspectives: historical, economic, political, legal and so on. Each perspective permeates the others. Even within the more limited field of international law, discussions of sovereignty diverge considerably and generate fierce debate.[18] It is not possible to survey and unpack part never mind all of this material, but some of its lineaments may be remarked upon in order to help us understand how the notion of sovereignty might apply to energy resources. Two approaches to sovereignty (focusing on its territory or natural resources) are provided in order to illustrate the way in which narrow and broad conceptions of sovereignty might accommodate questions about control over energy. This reaffirms the position advanced that only more nuanced constructions of sovereignty can be used to deal with energy resources.

In perhaps the most general terms, sovereignty refers to the locus of authority within a system. For international law, as a decentralised system of states, that locus is normally considered to be the State. This is reflected in positive international legal doctrine. Thus Judge Huber described sovereignty as independence: "Independence in regard to a portion of the globe is the right to exercise therein, to the exclusion of any other State, the functions of a State".[19] Authority in this view is framed spatially, sometimes referred to as "territorial sovereignty". Here sovereignty is exclusionary within the spatial limits of the State, wherein the State may exercise plenary authority. This view of territorial sovereignty is often associated with an absolutist view of sovereignty: the State is either sovereign or it is not.[20] This approach seems to provide a conceptual basis for strong State control of resources; the idea of energy nationalism as discussed by authors like Bö hme.[21] There is some force since this approach to the allocation of authority to States in this way is often regarded as fundamental to the structure of international

[17] This echoes Gavouneli's view of jurisdiction in the law of the sea. M. Gavouneli, *Functional Jurisdiction in the Law of the Sea* (Martinus Nijhoff, Leiden, 2007).

[18] See J. Bartleson, *A Genealogy of Sovereignty* (Cambridge University Press, Cambridge, 1995); S.D. Krasner, *Sovereignty: Organised Hypocrisy* (Princeton University Press, Princeton, 1999); N. Walker, *Sovereignty in Transition* (Hart, Oxford, 2003); M. Koskenniemi, *From Apology to Utopia* (Cambridge University Press, Cambridge, 2005), chapter 4; J. Bartelson, 'The Concept of Sovereignty Revisited' (2006) 17 *European Journal of International Law (EJIL)* 463-74; R. Jackson, *Sovereignty: Evolution of an Idea* (Polity Press, Cambridge, 2007).

[19] *Island of Palmas* case (1928) 2 RIAA 829, at 838.

[20] G. Elian, *The Principle of Sovereignty over Natural Resources* (Sijthoff and Noordhoff, Alphen aan den Rijn, 1979) at 1-10; K.J. Holsti, *Taming the Sovereigns* (Cambridge University Press, Cambridge, 2004) at 114.

[21] D. Bö hme, *EU-Russia Energy Relations: What Chance for Solutions? A Focus on the Natural Gas Sector* (Universitä tswerlag, Potsdam, 2011) at pp. 46-8.

law.[22] There is a general view that sovereignty over natural resources entitles the State to freely determine how such resources are dealt with under domestic property and regulatory regimes.[23] As an intellectual construct, sovereignty does not demand a particular definition or content. Understood thus, the absolutist view is in no way necessary, although it may be regarded as desirable as a means of facilitating good order. It provides a simplified, yet compelling account of a complex world, by carving up the world into non-overlapping territorial units with authority to regulate internal matters, subject to a duty not to harm or interfere in the authority of other States.[24] The actions of other actors, such as individuals, corporations and NGOs, are then linked to these centres of authority. International law rules of attribution and accountability structure the legal relationships outwards from the central hub of sovereignty. This view is reflected in certain rules of international law that retain strong normative influence. Thus Article 2(4) of the United Nations Charter requires States to refrain from the threat or use of force against the territorial integrity or political independence of other States, and Article 2(7) provides that "[n]othing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state or shall require the Members to submit such matters to settlement under the present Charter..."[25]

Despite the existence of specific rules which echo an absolutist approach to sovereignty, this approach is considered by the most commentators to bear little resemblance to reality. For example, Slaughter notes two deficiencies with this view of sovereignty: the ineffectiveness challenge, which highlights that States cannot pursue their objectives without some degree of political or economic support from other States, and the interference challenge, which recognises that the exclusive domestic jurisdiction of States is frequently infringed in practice.[26] These arguments challenge the exclusionary idea of sovereignty. Even those holding to the classical positivist position accept sovereignty has limits and so it is described as the "fullest rights over territory *known to the law*".[27] Thus law necessarily delimits the scope of sovereignty, and the door is quickly open to relative accounts of sovereignty. Indeed, absolute sovereignty is under increasing challenge from those that regard sovereignty as a variable or relative concept. Or who advocate a view of sovereignty as a status realised through participation in the international system.[28] Here (external) sovereignty is regarded as contingent on the existence of an (international) society and it is from this society that authority is drawn.[29] Presently, it seems that relative explanations of sovereignty are in the ascendancy.[30]

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[22] J.L. Brierly, *The Law of Nations* 6th ed. (Oxford University Press, Oxford, 1963) at 162; M. Shaw, 'Territorial Administration by Non-territorial Sovereigns' in T. Broude and Y. Shany (eds.) *The Shifting Allocation of Authority in International Law* (Hart, Oxford, 2008) 369-415, at pp. 369-370.

[23] See for example, Y. Omorogbe and P. Oniemola, 'Property Rights in Oil and Gas under Domanial Regimes' in McHarg *et al* (n 7) 115-139 at p. 115.

[24] B. Kingsbury, 'Sovereignty and Inequality' (1998) 9 *EJIL* 599-625, at pp. 610-11.

[25] (San Francisco, 26 June 1945, entry into force 26 October 1945) 892 *UNTS* 119.

[26] A.M. Slaughter, 'Sovereignty and Power in a Networked World Order' (2004) 40 *Stanford Journal of International Law* 283-327 at pp. 284-5.

[27] Brierly, (n 22) at p. 162 (emphasis added).

[28] A. Chayes and A.H. Chayes, *The New Sovereignty. Compliance with International Regulatory Agreements* (Harvard University Press, Harvard, 1998) at p. 27.

[29] Admittedly, this pithy observation glosses over considerable complexities than space permits. Here it is suffice to observe that law is viewed as socially contingent, and so society rather than the individual State is the source of legal authority. See Judge Anzilotti in the *Customs Regime between Germany and Austria* (1931) PCIL, Se. A/B, No. 41, 57. On the basis of authority, see further P. Allott, 'Mare Nostrum: A New International Law of the Sea' (1992) 86 *AJIL* 764-87. See also some of the observations in J. d'Aspremont, *Formalism and the Sources of*

In contrast to the traditional view of sovereignty, within accounts of relative sovereignty authority is diffuse and manifested through various interactions. Accordingly, it is possible to view the application of sovereignty to natural resources as a series of jural relations concerned with, *inter alia*, the right to possess, use, manage, and enjoy the benefits derived from territory and natural resources therein. And sovereignty is not just about rights; it entails duties. In order to protect the interests of other actors, State are subject to certain duties of non-harmful use or cooperation in respect of territory and natural resources. Sovereignty is meted out and dealt with not in absolute terms, but by way of variable, individual transactions. Territory and the resources therein may be jointly managed by States, subject to trusteeship regimes, or bound by 'use-rights' in favour of other States.[31] Foreign investment may be secured by exclusive rights to natural resources, and guaranteed against expropriation.[32] These dealings may limit how authority is exercised temporarily. They may result in the same resource being subject to multiple uses and degrees of control by various actors. A good example of this is the treatment of fisheries under international, EU law and domestic law.[33] Although commenting upon how international law deals with property rights in respect of natural resources, Redgwell's brief survey of international instruments and cases demonstrates how international law structures and limits control of resources in terms analogous to property.[34] This reaffirms the above point that sovereignty over resources is constructed in terms of discreet jural relations. An important element of this is the role played by international human rights law and the protection of property as a human right.[35] Here enjoyment of certain rights is directly opposed to the State, indicating a direct concern with needs or interests of individuals, rather than States. This view of sovereignty permits more calibrated understanding of the ways in which States act, and more closely resembles how natural resources or energy is regulated. Furthermore, whilst it does not necessarily support the type of conceptualization of energy sovereignty rooted in individual choice and control,[36] it is at least consistent with its goal of securing individual access to essential energy needs.

Traditional conceptions of sovereignty, as exclusive control over a portion of the globe, are simply irreconcilable with the way the world works today. States are increasingly interdependent, socially, politically and economically, and this is reflected in law. Many energy resources are fluid but part of expensive, complex, and fixed transnational networks. This is particularly the case for marine renewable energy resources which draw upon components of global systems, and whose use cannot be confined to the territory of single States. The networks necessary to make use of renewable energy need to be resilient and secure. This means that more nuanced notions of sovereignty are required to support and sustain energy use. However, more recent accounts of sovereignty tend to either contest the nature of sovereignty or atomise it, examining it as a series of localised jural relations as manifest in particular contexts. The

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International Law A Theory of the Ascertainment of Legal Rules (Oxford University Press, Oxford, 2011) chapter 1.1.

[30] See the discussion by G. Simpson, *Great Powers and Outlaw States. Unequal Sovereigns in the International Legal Order* (Cambridge University Press, Cambridge, 2004) chapter 2.

[31] See further R. Barnes, *Property Rights and Natural Resources* (Hart, Oxford, 2009) at pp. 222-8.

[32] See M Sornarajah, *The International Law on Foreign Investment* 3rd ed. (Cambridge University Press, Cambridge, 2010) chapter 10.

[33] See generally, R. Churchill and D. Owen, *The EC Common Fisheries Policy* (Oxford University Press, Oxford, 2010).

[34] C. Redgwell, 'Property Law Sources and Analogies in International Law' in McHarg *et al.*, (n7), at pp. 100-12.

[35] *Ibid*., at pp. 105-6.

[36] See 00.

sophistry of such approaches may be better adapted to reality and flexible, but this renders it difficult to apprise ourselves of how effectively and fairly access to and use of energy is determined at the global level. It collapses into highly localised relationships. The main problem with an account of energy sovereignty drawn in terms of relative sovereignty is that it may lack coherence. It is then exposed to criticism for being descriptive rather than normative. International law, like any other social system is a system of informed and patterned behaviour. This indicates the need for principles or points of reference to determine the legitimacy of specific rules that transcend the individual rules. In short it requires sovereignty to be justified. Before considering how this might be approached it is helpful to examine how questions of energy sovereignty are approached in the literature and the main legal texts. This tends to support a more flexible approach that can adapt to the nature of energy and its uses.

Energy Sovereignty in Context

Any consideration of energy sovereignty cannot take place in a vacuum. It must acknowledge how policies, laws and debates have evolved, the meaning and relationship of core terms and concepts, and the place of law in shaping any debates. This part examines, first, how the term energy sovereignty, as well as cognate concepts such as energy security and energy nationalism, is used and how it has developed in the context of questions about access to traditional energy resources.[37] Noting the complexity of such matters, it demonstrates the main relevance of international law to debates about control of energy. A review of how specific instruments, including the LOSC and Energy Charter Treaty, actually address questions of energy sovereignty shows how more nuanced approaches to energy sovereignty are either supported or required by international law.

Use and Development of the Concept of Energy Sovereignty

Use of the term 'energy sovereignty' is growing, although its precise meaning is not clear, especially when viewed from a legal perspective. Friends of the Earth define the term as "the right of people to have access to energy and to choose sustainable energy sources and consumption patterns that will lead them towards truly sustainable societies."[38] The idea is firmly located in the discourse of rights and associated with similar movements/concepts such as 'food sovereignty'.[39] It is thus about empowering individuals and ensuring that resources are available to meet needs. In contrast, Bö hme uses the phrase to describe the approach of energy producing countries to secure control over natural resources, especially to resist exploitation of these under free market regimes.[40] This approach is also known as "energy nationalism",[41] and it

[37] The term energy sovereignty is preferred since this accommodates a wider range of perspectives than the more commonly used term 'energy security'.

[38] Friends of the Earth International. *Annual Report 2013*, at p. 3, available at http://www.foei.org/wp-content/uploads/2014/06/FoEI-Annual-Report-2013.pdf. This and subsequent online resources accessed 1 September 2014.

[39] N. Bellinger and M. Fakhri, 'The Intersection Between Food Sovereignty and Law' (2013) 28 *Natural Resources and Environment* 45 [end reference??]; M. Windfuhr and J. Jonsén, *Food Sovereignty: Towards Democracy in Localized Food Systems* (IDTG, Working Paper, 2005) at p. 21.

[40] Bö hme (n 21).

[41] D. Bochkarev and G. Austin, *Energy Sovereignty and Security: Restoring Confidence in a Cooperative International System*. East West Institute Policy Paper 01/2007, at p. 2. Available at http://www.ewi.info/idea/energy-sovereignty-and-security-restoring-confidence-cooperative-international-system.

is closely linked to the more frequently used term "energy security". This seeks to ensure that the State controls access to energy resources.[42] The International Energy Agency defines energy security as the "uninterrupted availability of energy sources at an affordable price."[43] Similarly, Barton *et al* define it as "a condition in which a nation and all, or most, of its citizens and businesses have access to sufficient energy resources at reasonable prices for the foreseeable future free from serious risk of major disruption of service".[44] Whilst these approaches do not deny the interests of individuals, they place the State at the centre of debates about ensuring energy security. For present purposes it is not necessary to synthesise a common meaning of energy sovereignty, but merely to note that nuances in any definition of the core concept reflect different views on how to address fundamental questions about who controls energy, and how best to structure such control in order to meet the needs or interests of energy users. It may also be observed that different views of energy sovereignty are susceptible to different accounts of sovereignty, as explored above.

Energy sovereignty is not a new concern. Control of energy resources has been the object of both national/international policy and academic study for much of the twentieth century.[45] This has mainly focused upon the supply of oil as the means of sustaining military machines and industrial development. International lawyers will be familiar with how the desire to secure access to oil supplies provoked the Truman Proclamation of 1945,[46] influenced the development and regulation of oil concession from the 1950s,[47] and came to the fore of debates about international peace and security with the emergence of the Organization of Petroleum Exporting Countries (OPEC) in the 1970s.[48] The post-World War II process of decolonisation generated considerable literature on questions of sovereignty over natural resources.[49] It also highlighted the importance of international cooperation in meeting energy supplies given the dislocation of many energy resources from the main consumers of energy. To a large extent, it is oil (and gas) which has shaped discussions about the regulation of energy supply, and in particular exploration, production and supply lines, as well as the regulation of oil and gas markets. With increasing dependence on gas and electricity, there is now greater need for cooperation in developing, maintaining and managing resilient energy supply networks. Unlike oil and coal, gas and electricity are particularly dependent upon fixed and complex networks of cables and pipelines. In recent decades, the regulation of energy has come under increased

[42] See generally, G Kaft and A Korin (eds.), *Energy Security Challenges for the 21st* Century (Greenwood, Santa Barbara, 2009); R. Youngs, *Energy Security. Europe's New Foreign Policy Challenge* (Routledge, London, 2009); G Bahgat, *Energy Security and Interdisciplinary Approach* (Wiley, Chichester, 2011).
[43] See: http://www.iea.org/topics/energysecurity/subtopics/whatisenergysecurity/
[44] B. Barton, C. Redgwell, A. Rønne, and D. N. Zillman, 'Introduction' in *Energy Security. Managing Risk in a Dynamic Legal and Regulatory Environment* (Oxford University Press, Oxford, 2004), 3-14 at p. 5.
[45] D.R. Bohi and M.A. Toman, *The Economics of Energy Security* (Kluwer, Dordrecht, 1996); D. Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World* (Penguin, London, 2011)
[46] A. Hollick, 'US Oceans Policy. The Truman Proclamation' (1976) 17 *Virginia Journal of International Law* 23-55.
[47] M.A. Mughraby, *Permanent Sovereignty over Oil Resources: a study of Middle East oil concessions and change* (Middle East Research and Publications Centre, Beirut, 1966).
[48] J.J. Paust and A. Blaustein 'The Arab Oil Weapon. A Threat to International Peace' (1974) 68 *AJIL* 410-439.
[49] See, for example, G. Elian, *The Principle of Sovereignty over Natural Resources* (Sijthoff & Noordhoff, Alphen an den Rijn, 1979); K. Hossein and S.R. Chowdry, *Permanent Sovereignty over Natural Resources: Principles and Practice* (Pinter, London, 1984); G. Abi-Saab, 'Permanent Sovereignty over Natural Resources and Economic Activities' in M. Bedjaoui (ed.) *International Law: Achievements and Prospects* (Martinus Nijhoff, Dordrecht 1991) 597-618; N. Schrijver, *Sovereignty over Natural Resources. Balancing Rights and Duties* (Cambridge University Press, 1997).

scrutiny from an environmental perspective with the realisation of the impacts of global warming and the move towards renewable energy supplies. This has begun to generate a distinct legal literature, and efforts to place energy issues within the broader paradigm of sustainable development.[50] Whilst this has not lessened the importance of traditional concerns about the control of energy resources and supplies, it has demonstrated the increasing complexity of factors that need to be accounted for in energy regulation.

International Law and the Regulation of Energy

The regulation of energy is undoubtedly complex. Typically regulation occurs through technical rules of domestic law which focus on discreet aspects of energy production systems: exploration, exploitation, production and supply. These are overlaid by rules on planning, health and safety, environmental protection, finance and investment, taxation and so on. In part the complexity is a product of the way the domestic law has developed. Thus, it has been observed that energy law has evolved incrementally, instrumentally, and in a disjointed fashion.[51] And that it focuses on adequate supply, rather than efficient or equitable use or environmental consequence. At the risk of over-simplifying trends in regulation, approaches have evolved (or perhaps revolved) under domestic law from regimes focused upon State centred control to deregulated market based approaches, with more recent efforts that seek to blend public and private regulatory approaches.[52] Domestic regimes and regulatory approaches are dynamic systems, continuously evolving novel and differentiated tools to regulate energy activities.

Leaving aside the complex relationship between domestic and international law, it remains necessary for international law to provide a sufficiently coherent and certain basis for operation of domestic regulatory regimes, whilst also ensuring that such regimes respect necessary limits dictated by international law.[53] More specifically international law has a central role to play in six aspects of energy regulation. Firstly, it determines, or provides the framework for, how transboundary or common resources are to be utilised. At root these are essentially questions about who controls a non-exclusive resource. Commentators have long been concerned with how international law should deal with common deposits of oil and gas reserves.[54] However, renewable resources may present even more complex problems of international coordination and cooperation. For example, wind and tidal energy are the products of common pool resources which result from complex natural processes that reach beyond the exclusive control of any State.[55] As such they require coordinated regulation between States in

[50] A.J. Bradbrook and R.L. Ottinger (eds.), *Energy Law and Sustainable Development* (IUCN, Gland, 2003); R. Lyster and A.J. Bradbrook, *Energy, Law and the Environment* (Cambridge University Press, Cambridge, 2006); H.T. Anker, B.E. Olsen and A. Rønne (eds.), *Legal Systems and Wind Energy. A Comparative Perspective* (Kluwer Law International, Alphen aan den Reijn, 2009); R.L. Ottinger, *Renewable Energy Law and Development. Case Study Analysis* (Edward Elgar, Cheltenham, 2013).

[51] N.A. Robinson, 'Foreword' in Bradbrook and Ottinger, *ibid*, vii - xiii at p. vii.

[52] B. Barton, L. Barrera-Hernández, A.R. Lucas and A. Rønne, 'Introduction' in B. Barton et al. (eds.), *Regulating Energy and Natural Resources* (Oxford University Press, Oxford, 2006) 3-10, at pp. 3-6.

[53] See further S.W. Schill, 'The interface between international and national energy law' in K. Talus (ed.) *Research Handbook on International Energy Law* (Edward Elgar, Cheltenham, 2014) at 44-76; A. Bradbrook, 'The Development of Renewable Energy Technologies and Energy Efficiency Measures through Public International Law' in D. Zilman *et al* (eds.) *Beyond the carbon Economy. Energy Law in Transition* (Oxford University Press, Oxford, 2008), 109-32; C. Redgwell, 'International Energy Security' in B. Barton *et al* (n 44) 17-47.

[54] See Onorato (n 11); and Ong (n 11).

[55] On the domestic aspects of this see: Y. Lifshitz-Goldberg (n 8). On the international law aspects of common pool resources, see R. Barnes (n 31).

accordance with the natural patterns of the energy system, as well as the consequences of its capture. This is particularly important in the marine environment where the interplay of States' rights and duties is more complex. Secondly, international law may constrain the ability of States to control or interfere in energy production activities, particularly through international investment law.[56] Thirdly, international law facilitates access to and supply of energy resources. Many energy resources are dislocated from the users of energy and so international networks of supply (pipelines, cables and transport routes) are required to support the transfer of energy and raw materials. Again, this is important in a marine context where the oceans and the seabed provide a medium for such networks. Fourthly, international law provides the basic framework for controlling the transboundary consequences of energy use – i.e. transboundary pollution. Fifthly, international law coordinates responses to global challenges, and in particular climate change. Lastly, it may facilitate the coordination of domestic energy law regimes and policies, including finance, technological support and training for developing countries.

In these six categories, international law has much to say on some aspects of energy sovereignty, particularly transboundary pollution[57] and protection of investments from expropriation.[58] In the context of the marine environment a useful overview of such instruments, as well as domestic measures in contained in the Report of the Secretary General on *Oceans and Law of the Sea 2012*.[59] For example, the transport of oil and gas resources, which is central to questions of energy sovereignty, is subject to numerous provisions of the Law of the Sea Convention (LOSC) dealing with pollution,[60] as well as MARPOL,[61] regional pollution agreements,[62] and liability regimes.[63] Offshore exploration activities are also addressed through the LOSC,[64] as well as regional pollution regimes. Furthermore the disposal of energy by-products such as radioactive waste is controlled through instruments such as the London Dumping Convention[65] or the Basel Convention.[66] However, as indicated below, it has surprisingly little to say, at least directly, on the meaning of energy sovereignty or sovereignty over energy resources in the marine environment.

[56] See generally R. Dolzer and C. Schreuer, *Principles of International Investment Law* (Oxford University Press, Oxford, 2012); Sornarajah (n 32); S.L. Escarcena, *Indirect Expropriation in International Law* (Edward Elgar, Cheltenham, 2014).
[57] See P. Birnie, A. Boyle and C. Redgwell, *International Law and the Environment* 3rd ed. (Oxford University Press, Oxford, 2009).
[58] See for example the authors cited in (n 56).
[59] UN Doc. A/67/79, 4 April 2012.
[60] United Nations Convention on the Law of the Sea (Montego Bay, 10 December 1982, in force 16 November 1994), 1833 *UNTS* 396. See generally, Part XII and, in particular, Article 211 on ship source pollution.
[61] International Convention for the Prevention of Pollution from Ships, as Modified by the Protocol of 1978 Relating Thereto (London, 2 November 1973 and 17 February 1978, entry into force 2 October 1983),1340 *UNTS* 62.
[62] See for example, Article 4 of the Convention for the Protection of the Marine Environment of the North-East Atlantic 1992 (Paris, 22 September 1992, entry into force 25 March 1998), (1993) 23 *LOSB* 32 (OSPAR Convention).
[63] See the Convention on Civil Liability for Oil Pollution Damage 1992 (London, 27 November 1992, entry into force 30 May 1996), 973 *UNTS* 3.
[64] See LOSC, Article 194(3)(c).
[65] Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London, 29 December 1972, entry into force 30 August 1975), 1046 *UNTS* 138.
[66] Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989 (Basel, 22 March 1989, entry into force 5 May 1992), (1989) 28 *ILM* 657.

Four law of the sea instruments expressly refer to energy in the context of pollution[67] but of these, only the LOSC directly addresses the issue of sovereignty over energy. Article 56(1)(a), provides that coastal States have: "*sovereign rights* for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the (exclusive economic) zone, such as the production of energy from the water, currents and winds".[68] This is, however, qualified by Article 56(2), which requires coastal States to exercise such rights with due regard to the rights and interests of other States, and in a manner compatible with the LOSC. This places a balancing of interests at the heart of any questions about energy sovereignty.[69] There is some debate over the meaning of sovereign rights. O'Connell has noted the propensity of such rights to consolidate in sovereignty.[70] Although not dealing with the question of sovereignty, Article 60(1) is important since it provides the basis for regulating structures used to access marine energy resources in the exclusive economic zone (EEZ). Coastal States are allocated *exclusive rights* to construct, operate and use such structures.[71] The precise nature of the right is not specified, although it presumably flows from the State's general sovereign rights over resources in the EEZ. Article 60(2) subsequently refers to exclusive jurisdiction to regulate such structures, which includes prescriptive and enforcement jurisdiction. Decisions concerning the placement and operation of such structures must take into account navigational concerns, whilst their removal must have due regard to fishing and protection of the marine environment.[72]

The LOSC is silent on the control of energy in the territorial sea. Since this is described as a zone to which the sovereignty of the State extends, sovereignty over energy resource would be treated in the same way as on land territory.[73] In practice, there is no doubting the existence of exclusive coastal State authority over energy resources, either mineral or renewable. This is subject to the preservation of third State navigational interest through the regime of innocent passage.[74] This does not require sharing or the use of resources in particular way; merely that the location of extraction/generation facilities does not hamper or deny the right of passage.[75]

Control over energy supply is not directly mentioned in the LOSC, but is covered by Article 79, which provides that '*All* States are entitled to lay submarine cables and pipelines on the continental shelf'. This is crucial to the creation and maintenance of energy networks, and as with the above provisions, it also includes a 'balancing of interests', which permits the coastal

[67] Energy is included within the definition of pollution in four instruments. See Article 2(a) of the Convention for the Protection of the Marine Environment and Coastal Region of the Mediterranean, as amended (Barcelona, 16 February 1976, and amended 10 June 1995, entry into force 12 February 1978 and 9 July 2004, respectively),(1996) 31 LOSB 65; Article 2(1) of the Convention on the Protection of the Marine Environment of the Baltic Sea Area 1992 (Helsinki, 9 April 1992, entry into force 17 January 2000), 2099 *UNTS* 197; Article 1(d) of the OSPAR Convention; Article 1(1)(4) of the United Nations Convention on the Law of the Sea 1982, 1834 *UNTS* 397.

[68] Similarly, Article 77 on the continental shelf provides coastal States with exclusive sovereign rights as regards natural resources. However, this is focused on mineral resources of the seabed and subsoil, and does not concern renewables.

[69] Regard may also be had to Article 59 which requires that conflicts about unattributed rights are resolved on the basis of equity in light of relevant circumstances and the interests of the parties and the international community.

[70] D.P. O'Connell, *The International Law of the Sea* (Clarendon Press, Oxford, 1982) at p. 481.

[71] Article 60(1). These provisions extend to the continental shelf according to Article 80.

[72] Article 60(7) and (3) respectively.

[73] See Article 2.

[74] Articles 17-19

[75] Article 24.

State to take reasonable measures to ensure the enjoyment of its resource related rights.[76] The freedoms of the highs seas include the freedom to lay submarine cables and pipelines and the freedom to establish installations.[77] This would apply to wind turbines and other renewable energy installations. Both freedoms are subject to the provisions of Part VI on the continental shelf, where this extends under the high seas. Thus, only the coastal State may authorise or operate platforms fixed to the seabed of its continental shelf where this extends beyond 200nm.[78] It is questionable whether or not this includes floating devices used to generate energy. However, technological and economic limitations mean that such devices are not likely to operate in the near future and render questions about their regulation on the highs seas somewhat moot at this point in time.[79] More significant is Article 87(2) which requires both freedoms to be exercised with due regard to the interests of other States.[80] As in the EEZ, States rights are subject to an important, if somewhat general balancing of interests with those of other States.

This brief overview of the LOSC indicates that beyond the territorial sea, any rights in respect of energy resources, or the means for providing energy supplies, are inherently subject to a balancing of interests in light of other States interests and potentially competing uses of sea space. The exercise of sovereign rights, jurisdiction or "freedoms" are more strongly linked to the interest of other States or the international community. This supports a more cooperative approach towards the regulation of energy resources and supplies in the marine environment. In particular, the requirement of due regard requires States to be aware of and take into account the interests of other States when exercising authority. Further, it may require positive cooperation, and possibly the pursuit of mutually beneficial outcomes.[81] Despite the articulation of concepts that facilitate cooperative approaches, the LOSC offers little guidance as to the way in which such rights are to be exercised in specific contexts concerning energy development activities and further research is required to explore and explain how such a balancing of interests ought to work.

The second main reference to energy sovereignty in a multilateral instrument occurs in the Energy Charter Treaty (ECT).[82] The ECT aims to promote cooperation in the energy field and the development of an efficient energy market throughout Europe.[83] Its remit is generally limited to investment protection, rather than the regulation of sovereignty or the wider range of energy-use activities.[84] The ECT applies to contracting States territories, including territorial waters and sea and seabed areas where the State exercises sovereign rights and jurisdiction.[85] Article 18 of the Energy Charter Treaty declares States "sovereignty and sovereign rights over energy resources". This is to be exercised in accordance with and subject to the rules of

[76] Article 70(2) and (3).
[77] Articles 87(c) and (d) respectively.
[78] Article 80 cross-references Article 60.
[79] Interesting questions arise as to the extent that the provisions on the common heritage of mankind in Part XI, as well as the provisions of the 1994 Implementation Agreement might apply to renewable projects. See Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (New York, 28 July 1994, entry into force 28 July 1998) 1836 *UNTS* 42.
[80] Article 87(2).
[81] *Fisheries Jurisdiction case* (United Kingdom v. Iceland) Merits, Judgment [1972] ICJ Reports 3, para. 72.
[82] (Lisbon, 17 December 1994, entry into force 16 April 1998), reproduced in (1995) 33 *ILM* 360.
[83] Article 2 of the ECT, and Title I of the Concluding Document of the Hague Conference on the European Energy Charter.
[84] See generally, T. Wälde (ed.), *The Energy Charter Treaty. An East-West Gateway for Investment and Trade* (Kluwer Law International, London, 1996).
[85] Article 1(10).

international law. Although the ECT is committed to the development of energy markets, it does not limit a State's authority and discretion as to how it structures ownership of energy resources. Although the treaty "promotes access to resources", this hortatory requirement does not trump sovereignty and leaves the ownership of resources unaffected.[86] This is reaffirmed by Article 18(3), which provides that:

> [e]ach state continues to hold in particular the rights to decide the geographical areas within its Area to be made available for exploration and development of its energy resources, the optimalization of their recovery and the rate at which they may be depleted or otherwise exploited, to specify and enjoy any taxes, royalties or other financial payments payable by virtue of such exploration and exploitation, and to regulate the environmental and safety aspects of such exploration, development and reclamation within its Area, and to participate in such exploration and exploitation, inter alia, through direct participation by the government or through state enterprises.[87]

The ECT pays lip service to environmental concerns with a sweeping list of factors to be taken into account. Article 19 comprises a list of eleven hortatory action points that request parties to "promote", "have regard to" or "take into account" certain environmental matters. For the most part, objectives like public participation, the polluter pays principle, the use of environmentally sound technologies, and environmental impact assessment, are addressed in greater detail in other instruments.[88]

Following on from the above discussion of the nature of energy, it is to be noted that there is some recognition of the different qualities of energy in the Energy Charter Treaty. Thus it refers to the regulation of energy throughout the "energy cycle", meaning from prospecting, though production and consumption, to conversion and supply, and ultimately disposal.[89] However, as noted above, this provision is framed in hortatory terms. If we are to realise a meaningful account of energy sovereignty, then such an account must reflect a broader understanding of the whole energy cycle and its complexities. To some extent the ECT provisions on transit already do this.[90] Thus, States are required to make necessary provisions to facilitate the transit of energy materials and products, which helps address the concerns re the displacement of the location of energy resources from users. It is also reflected in the broader range of environmental and liability laws that govern human activities. In this sense authority to govern energy is already diffused across the system of international law. This conclusion might not be novel, but it serves to reinforce the interconnectedness of regulatory matters. Energy law cannot be viewed apart from wider and related legal regimes.

Nuclear energy apart, there has been little attention to marine energy generation in multilateral fora. This was noted in the Report of the Secretary General on Oceans and the Law

[86] Article 18(2).
[87] See also Article 2 of Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons. OJ L.164, 30 June 1994 pp. 3-8; Article 4 of Directive 2009/31/EC on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006. OJ L 140, 5 June 2009, at pp. 114-135.
[88] See further C. Shine, 'Environmental Protection under the Energy Charter Treaty' in Wälde (ed.), (n 84) 520-45.
[89] Article 19.
[90] Article 7.

of the Sea 2012.[91] At the UN level, ECOSOC established a number of standing committees dealing with aspects of natural resources and renewable energy, although these have since been subsumed within the work of the Commission on Sustainable Development.[92] In 2009, the International Renewable Energy Agency (IRENA) was established with the objective of promoting "the widespread and increased adoption and the sustainable use of all forms of renewable energy."[93] Like the UN bodies, IRENA's mandate is generally limited to facilitating dialogue, promoting research and education, and developing policy recommendations. Perhaps unsurprisingly, most binding international agreements concerned with energy production have emerged in the context of transboundary hydrocarbon exploitation.[94] This seems to be a most fertile area for further research since these agreements will reveal much about States' perspectives on energy sovereignty. These bilateral treaties do not generally address energy sovereignty directly, but are instead focused on the practical aspects of development, focusing on ensuring the optimal exploitation of resources. Of course, one should be careful about generalising from agreements designed between different parties and in different contexts. However, as Bankes' analysis shows, they are very much designed to provide a secure basis for commercial development. They also evidence an increasing institutionalisation of hydrocarbon development.[95] In practice, this normally entails some degree of compromise by States with claims to the resource, and some limitation on unilateral exploitation, either by way of joint authorisations or, at least, authorisations that follow defined procedures. This reveals that a more nuanced approach to questions of sovereignty or sovereign rights over energy resources prevails in practice.

Justifications of Sovereignty over Marine Energy Resources and Supplies

Justificatory considerations have implications for specific rules on the use of resources, so a fuller appreciation of the various intellectual justifications for control can enrich our understanding of the best way in which energy resources can and should be regulated. The main justification associated with sovereignty is that of order and stability of the system.[96] In the context of resources, and still less that part of it dealing with marine resources, much of the literature on the justification of sovereignty over natural resources lacks in depth. Typically this focuses on thin justifications based upon redistribution of wealth during and post-decolonisation.[97] This can be contrasted with the depth of the literature on the theoretical justification of property and property rights over natural resources.[98] This literature presents a

[91] Secretary General (n 59) at para. 26.
[92] See N. Schrijver, *Development without Destruction. The UN and Global Resource Management* (Indiana University Press, Indiana, 2010) at pp. 141-142.
[93] Available online at http://www.irena.org/documents/uploadDocuments/Statute/IRENA_FC_Statute_signed_in_Bonn_26_01_2009_incl_declaration_on_further_authentic_versions.pdf .
[94] See further N. Bankes, 'Recent Framework Agreements for the Recognition and Development of Transboundary Hydrocarbon Resources' (2014) 29 (4)) *International Journal of Marine and Coastal Law* XX-XX, this issue.
[95] *Ibid.*, at 00
[96] See Jackson (n 18) at p. 111.
[97] See for example Schrijver (n 49) at pp. 20-5.
[98] See J.W. Hamilton and N. Bankes, 'Different Views of the Cathedral: The Literature on Property Law' in McHarg *et al*, (n 7) 19-59, at pp. 46-52. Also, Barnes (n 31) at pp. 29-61.

plurality of justifications for ownership, cast in terms of liberty, natural rights, utility, order, efficiency, each with different implications for determining entitlement to own and use things.

Given the need to develop a strong normative basis for the control of energy resources, it is suggested that recourse to more fundamental justificatory theories is desirable. The most important questions concerning energy are questions related to control. Which States should control energy? How should States control energy? What are States entitled to do with the energy? Are there any limits on States use of energy? These are the same sort of questions that we ask about control, or ownership, of any resource by individual or community; should resources be excludable or shared, and if so, why? Therefore, at least for analytical purposes, it is informative to draw upon these justificatory theories. If we cast sovereignty in these terms, we can see how different justifications open up new avenues for answering questions about future resource control and supply. The above justification of sovereignty based upon order is of only partial use in providing an analytical framework for exploring these questions. As a way forward, we should consider alternative justifications of energy sovereignty. To provoke some thoughts on the matter, the final part of the article explores a natural rights based justification for sovereignty and its possible implications for marine energy resources and supplies.

It may be observed, first, that this analytical technique is not antithetical to international law. Natural rights are those rights inherent in a certain agent by virtue of their existence, and which are not contingent on the law or custom or some other forms of positive authority. The idea that certain rights are naturally inherent to States has a long tradition. Thus, Vattel notes the rights of states are "naturally the same as those of any other state."[99] Later, the

> general and fundamental rule of our duties towards ourselves is, that every moral being ought to live in a manner comfortable to his nature… A nation is a being determined by its essential attributes, that has its own nature, and can act in conformity with it…The Law of Nature prescribes it certain duties.[100]

Whilst a natural rights view of territorial sovereignty is dismissed by Shaw,[101] who explicitly sees it as confusing concepts of property and sovereignty, it is not without its adherents.[102] Natural law based approaches still retain some currency in explaining the way in which international law works.[103]

The basic justification of sovereignty as a natural right runs thus, States by virtue of their existence as moral agents enjoy exclusive authority over the physical space that constitutes the State. The existence of this authority precedes the existence of any conventional rules governing the status of the State, and entails certain rights and duties that must be recognised within subsequent conventional rules. What consequences does this justification of sovereignty entail? As noted, a starting point is to regard the physical space of the state as an essential component of

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[99] E. de Vattel, *The Law of Nations* (S.&E. Butler, Northampton Mass., 1805), Book I, Chapter I, §. 4.
[100] *Ibid*., §. 13.
[101] M. Shaw, *Title to Territory* (Ashgate, Aldershot, 2005) at p. 17.
[102] Nussbaum indicates that early scholars such as Martens viewed states as possessing certain natural rights: territorial sovereignty, independence, equality of treatment. A. Nussbaum, *A Concise History of the Law of Nations* (MacMillan, New York, 1953) at 183 also, E. Lauterpacht (ed.), *International Law, Being the Collected Papers of Hersch Lauterpacht* ,vol. 1 (Cambridge University Press, Cambridge, 1970) at p. 76; L. Henkin, *International Law, Politics and Values* (Martinus Nijhoff, Dordrecht, 1995) at p. 40.
[103] S. Hall, 'The Persistent Spectre: Natural Law, International Order and the Limits of Legal Positivism' (2001) 12 *EJIL* 269-307.

its agency. Thus territory and the resources, including energy resources, therein comprise part of the State and should not be separated from it.

At first glance this seems to support the claim of energy sovereignty linked to energy nationalism. The analogy is the agency of individual persons and "ownership" of their body, of which they cannot be deprived.[104] Of course, the analogy is not complete, since States do not necessarily require a particular amount of "physical form" to exist, and so the notion of territory as a fundamental requirement of statehood is notorious fluid.[105] States are social constructs rather than physical agents, and if some physical capacity or need for energy resources is not a necessary part of this construct, then the claim to ownership or control is broken. Moreover, it ignores the broader and more complex dependency of States on each other to service their needs, only one of which is energy. States need things that may only exist within the "body" of other States, or must be transited through other States. Thus States, or ordinarily their citizens and private companies, necessarily trade in goods and services that cannot be produced locally, or that can be procured more cheaply elsewhere. Arguably, securing transit and trade becomes more, or as important, as the relaying upon rules which allocate control based upon the initial location of energy resources. This belies a special significance attaching to the mere physical components of the State, and suggests that resources can be detached or used apart from the State for good reason, as determined by the needs of the wider community of States. This detachment or rather insertion of collective interests was highlighted in the above discussion of the balancing of interests that is inherent to the exercise of sovereign rights over marine resources, as well as the transit provisions of the ECT.

This basic approach to sovereignty as a natural right, presents further difficulties when applied to marine energy resources because maritime spaces beyond the territorial sea or continental shelf (as a natural prolongation of the landmass)[106] are not part of the State as such, but rather areas within which the State may extend its sovereign rights or jurisdiction. Arguably, this means that the simple natural rights-based justification cannot justify exclusive control over marine renewable energy resources derived from the water column or the wind, or other complex natural systems.[107] One needs to further justify claims to such resources in other terms.

An extension of the natural rights approach contends that when States vest their efforts in something they thereby reduce it to their sovereignty. In some ways, this might be conceived of as a rule of capture for States. The analogy is the labour-based justification of property.[108] However, the simple of form of this justification as applied to territorial sovereignty generates undesirable consequences, since it essentially justifies a first occupation view of sovereignty (possibly conquest or annexation). One may note here the controversy generated by Russia's

[104] Another way to conceive of this is to view States as communities of people who require physical space and resources to exist. These basic individual needs are then extrapolated to the level of the State as an organisational body. Of course, this is no longer an account based on natural rights, but rather one based upon need, and begs further questions about why the persons living in a particular space should have their needs met whilst others are not so entitled.

[105] 'There is … no rule that the land frontiers of a State must be fully delimited and defined." *North Sea Continental Shelf case* [1969] ICJ Report 4 at p. 22.

[106] See the Truman Proclamation 1945, reproduced in S.H. Lay, R. Churchill and M. Nordquist (eds.), *New Directions in the Law of the Sea*, vol. 1. (Oceana Publications, Dobbs Ferry NY, 1973) at pp. 106-7.

[107] E.g. ocean thermal energy or salinity gradient energy. See IRENA, *Ocean Energy Brief* Nos. 1 and 2. Available online at http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=445

[108] See the discussion of Locke's approach in Barnes (n 31), at pp. 30ff.

claims to the North Pole.[109] This first occupation approach is now discredited, but more plausible versions (the so-called labour/desert approach), require the labour to be socially productive. Thus a person's or a State's claim to control of 'external' things can be justified, for example, through the introduction of socially productive effort: extraction, regulation, use, transport, transfer of technology and so on. The meaning of socially productive is open to debate, but potentially wide in definition. It could include conservation. In part this is reflected in the conservation and management duties of the coastal State over living resources of the EEZ.[110] It is not clear that any such legal requirement of productive use applies to energy resources, and this is something to consider further, especially in the face of increasing pressure on limited energy supplies.[111] This emphasis on socially productive effort provides another interesting avenue to explore since most productive activities concerning energy capture and use are conducted by a multiplicity of actors, public and private, and whose actions might be attributed to a range of States, not merely the State hosting the raw materials or production facilities.[112] This may provide a counterpoint to simplistic accounts of "State directed" labour and reward for energy production, and one which justifies a broader stake in the products of offshore energy developments. This is particularly so given that improvements might be the product of efforts beyond a single State, such as the building of networks of supply lines, or the creation of market and regulatory regimes at the international level. If "reward" is given for socially productive effort, then this might also provide a moral basis for more cooperative approaches to energy use and supply, and shared interests into energy resources. This is highly relevant to marine renewable energy where complex physical and market networks are required to ensure that energy can be captured when available and then distributed to those with the ability to use it.

This brief outline indicates the potential for analysing questions of energy sovereignty and control of marine resources in terms of property justifications. It does not explore the full implications of this approach, and there are many interesting questions that remain to be asked. For example, one might ask how might the Lockean proviso that requires enough and as good be left for others be applied to claims by some States to exclusive control over globally important energy reserves. Neither does this article consider other important justifications, such liberty, identity, utility or efficiency, good order. Such approaches open up many more questions about how we should allocate control over energy resources and in what forms to States (or indeed other actors). It is clear that if we are to take claims about energy sovereignty seriously, and to consider how these can and should be advanced, much more work is required to frame the terms of the debate.

[109] See N. Matz-Luck, 'Planting the Flag in Arctic Waters. Russia's Claim to the North Pole' (2009) 2 *Göttingen Journal of International Law* 235-255.
[110] See for example LOSC, Articles 61-2.
[111] See D. Ong, 'Towards and International Law for the Conservation of Offshore Hydrocarbon Resources within the Continental Shelf?' in D. Freestone, R. Barnes and D. Ong (eds.) *Law of the Sea. Progress and Prospects* (Oxford University Press, Oxford, 2006) 93-119.
[112] On private actors, see further Trevisanut, this volume 00.

Energy Sovereignty in Marine Spaces

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Abstract

The term "energy sovereignty" is used with differing emphases to describe a State's rights or assertions over energy resources and supplies. Given the importance of offshore energy developments, particularly in the field of renewables, this article explores the meaning of energy sovereignty, arguing that more complex, cooperative approaches towards sovereignty are required in order to adapt to the nature of energy and energy demands. This approach is particularly important in the context of marine resources, where there is shown to be a carefully crafted balancing of interests between coastal States, third States and community interests. The article further suggests that in order to help explain energy sovereignty against this complex background, recourse may be had to theories of justification of ownership of resources. The example of natural rights-based approaches is used to show how this can inform the direction that legal regimes might take.

Keywords

Energy - sovereignty - sovereign rights - marine renewables

Introduction

Significant deposits of oil and gas are known to exist under the world's oceans. New deposits are still being discovered or rendered accessible through new or more efficient technologies. More recently, the oceans have become the principal focus for developments in the field of renewable energy with the growth in offshore wind farms. Invariably, energy resources will be shipped by sea, or transmitted through undersea pipelines and cables. The exploration, production and supply of energy from the sea have had an impact on all other ocean activities. This means that marine spaces are at the heart of debates about meeting the world's energy demands, and that international law of the sea is at the heart of debates about how such demands are met and balanced against other ocean uses. Much of this debate is framed in terms of energy sovereignty, which raises questions about the extent to which States, both individually and collectively, can and should be able to secure their energy supply needs, and how this will operate in practice. This article explores some of the preliminary issues that arise from claims about energy sovereignty in respect of marine resources. This is important because as calls for energy sovereignty grow in frequency and force, they must be reconciled with well-established rules and values concerning the way in which sovereignty operates, and must adapt to the particular physical conditions in which marine energy resources are located.

The article begins by analysing the meaning of "energy sovereignty", breaking it down into its component parts: energy and sovereignty. It argues that if we are to regulate energy, then

this must accord with the physical properties of energy, and in particular adapt to a more nuanced understanding of the distinction between energy resources and energy use. A fuller understanding of energy opens up opportunities to re-imagine the way we regulate energy, or at least properly conceptualise the way in which we regulate energy. This is particularly important in the context of marine renewables (wind/tidal energy), where the resource is not exclusive, or spatially located, but is subject to uncontrolled natural variables, all of which present challenges for existing legal approaches. The article then considers how sovereignty can be conceptualised, and suggests that relative accounts of sovereignty are better suited to the realities of energy use and the practice of States. This analysis of energy and sovereignty is then put into context in the next part, which outlines how debates about energy sovereignty have developed. The article shows that multilateral agreements do not appear to say much, at least directly, about energy sovereignty as it pertains to the complexities of energy supply and use. However, a broader network of international rights and obligations directly and indirectly affects energy use, and constrains more self-interested approaches towards the control of energy resources. Indeed, in some marine spaces States exercise sovereign rights or jurisdiction which are forms of authority more heavily qualified by requirements to exercise due regard to the interests of other States. This suggests that it is difficult to sustain claims to energy sovereignty based purely upon securing national interests. If a more nuanced approach to energy sovereignty is adopted, then this will require further analysis. The final part of the article begins this analysis by exploring the more fundamental justifications for control over resources. Typically, such justifications are framed in terms of good order or as calls for the redistribution of wealth. This compares poorly to justifications of property. Since energy sovereignty is essentially concerned with questions of who can control energy resources and supplies, the extent of such authority and any limits on this, i.e., exclusive control, justifications framed in terms of ownership might better inform debates about the meaning of energy sovereignty. Some of the implications of this approach are highlighted through examples drawn from natural rights-based approaches to property. The questions that even one such approach might generate suggest that much more research is needed to develop a meaningful understanding of "energy sovereignty".

Defining Energy and Sovereignty

Energy

If we are to talk meaningfully about energy sovereignty then it is necessary to understand the object of sovereignty. What is energy? This is not an easy question to answer, especially for a non-scientist. It can be regarded as an abstract scientific construct used to interpret aspects of reality. Yet it may also be observed and measured. In either case, there are aspects of energy that are not fully understood or explicable. As a noted physicist has observed: "It is important to realize that in physics today, we have no knowledge of what energy *is*." [1] A provocative remark: it should signal the fact that knowledge is contingent and changeable, and this needs to be factored into regulatory regimes.

To help frame the present discussion, energy can be defined as the power derived from the utilisation of physical or chemical resources. It is a property that a system possesses and can be used to do work. This is done by transferring energy from one object or system to another,

[1] R.P. Feynman, R.B. Leighton and M. Sands, *The Feynman Lectures on Physics* (Basic Books, New York, 2011) vol. I, sections 4-1. - 4-8.

for example, by burning fuel to produce heat, or converting kinetic energy from water into electricity. Scientists tell us that energy may take a variety of forms: electrical, light, elastic, kinetic, sound, thermal, chemical, gravitational and nuclear. These are generally reduced to potential or kinetic forms of energy. Each of these forms of energy may be stored, accessed and used in different ways depending upon its physical properties, location and the state of technology. Since energy has properties that determine how it can be used, these factors must be taken into account in the design of any regulatory regime. This applies to both specific rules and broad principles, such as sovereignty. Thus if a particular resource or form of energy is not exclusively located within a State, then it is generally not susceptible to claims of sovereignty.

The physical properties of an energy resource determine how it may be regulated. For example, sunlight (solar energy) is ubiquitous and results in approximately 170,000 terawatts of energy being delivered to the earth each day.[2] To highlight its potential for meeting energy demands, the International Energy Agency (IEA) reports that it "takes the sun one hour and 25 minutes to send us the amount of energy we currently consume in a year."[3] It is fungible, non-exclusive and intangible. It warms the earth to levels that are conducive to life. It is essential to the sustenance of life through photosynthesis. It provides a source of renewable energy. As a general category or source of energy, these factors render it a common resource; it cannot be possessed or rendered excludable, either by way of sovereign claims or individual ownership. This would be not only physically impossible, but also morally objectionable, because it would deprive non-owners or persons without access of the means to obtain an essential good. Of course this general proposition admits qualifications, since some limited absence of light may result from other factors, such as building shade.[4]

Another example is wind energy. Wind is the movement of air across the surface of the earth as denser cool air moves to fill space in low-pressure areas that is occupied by warm air. This movement is the product of differences or changes in air pressure, which are in turn the result of thermal changes and the rotation of the Earth. Wind stores kinetic energy which may be captured through wind turbines, which convert the energy into electrical or mechanical energy. Global potential for wind energy is estimated to be around 72 terawatts.[5] Wind performs a critical function in natural weather systems. It provides a renewable source of energy. It is also intangible, fungible and non-exclusive; so, like sunlight, it is a common pool resource. In the case of sunlight and wind, the energy may be captured at fixed points and this takes energy out of the natural system. This may allow for regulation under the "law of capture" within individual States.[6] However, this may fail to account for important externalities. In the case of wind energy, capture subtracts energy from downstream users.[7] Wind flow is distorted or

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[2] D.J. Rose, *Learning about Energy* (Plenum Press, New York, 1986) at 71.

[3] International Energy Agency, *Solar Energy Perspectives* (IEA Publications, Pairs, 2011) at 32.

[4] Most legal systems have developed local rules concerning rights to light in this context. See the Law Commission, *Rights to Light.* Law Commission Consultation Paper 210 (2013). Available at http://lawcommission.justice.gov.uk/docs/cp210_rights_to_light_version-web.pdf.

[5] C.L. Archer and M.Z. Jacobsen, 'Evaluation of Global Wind Power' (2005) 110 *Journal of Geophysical Research* Atmospheres D12110 1-20. However, such figures are subject to considerable debate. See C. de Castro, M. Mediavilla, L.J. Miguel and F. Frechosa, 'Global Wind Power Potential: Physical and Technological Limits' [2011) 39 *Energy Policy* 6677-6682.

[6] See generally, T. Daintith, 'The Rule of Capture. The Least Worst Property Rule for Oil and Gas' in A. McHarg, B. Barton, A. Bradbrook and L. Godden (eds), *Property and the Law in Energy and Natural Resources* (Oxford University Press, Oxford, 2010) 140-159.

[7] See Y. Lifshitz-Goldberg, 'Gone with the Wind? The Potential Tragedy of the Common Wind' (2010) 28 *UCLA Journal of Environmental Law and Policy* 435-71, at pp. 455-61.

reduced when passing through a turbine, leaving less kinetic energy for capture by other users.[8] Accordingly, some element of collective or cooperative regulation between States will be required. The examples of renewable energy may be contrasted with spatially fixed, tangible, finite sources of energy, such as coal or oil.[9] These are excludable and frequently reduced to State or private ownership, at least when located exclusively within a single State. However, even in these cases, the use of such resources will produce externalities (e.g., transboundary pollution) that entail some degree of collective regulation.

The physical attributes of energy may also affect the way in which it is regulated in less obvious, but equally important ways. It is a fundamental law of physics that energy cannot be created from nothing or destroyed. Energy can only be transformed from one state to another. This is known as the law of the conservation of energy (or the first law of thermodynamics) and it raises some interesting questions about the nature of energy and our use of it. First, it may be observed that energy production is focused on the generation of high-quality energy (energy that can do meaningful work). As such, we are concerned with transforming energy resources into particular types of energy (e.g., electrical energy). Second, this in turn raises questions about whether or not it is meaningful to talk in terms of "energy sovereignty". It is a fact of nature that we cannot control energy absolutely, but merely its potential at certain points in time or space. And even this is technologically contingent. If energy is not consumed, but merely changes state, then is it possible to exert sovereignty over energy *per se*? Rather it seems more useful to talk about control not of energy, but of control over the opportunities to change its state. At the very least, this attribute of energy suggests that its use will generate consequences beyond the scope of an individual agent's ability to control. Such externalities might include the uncontrolled dissipation of energy from industrial power generation, or the creation of by-products which the State is unable to handle, or pecuniary costs by others that suffer the consequences of an energy-use activity. If this is true, then sovereignty, narrowly construed in terms of exclusive power over a resource, seems to be a limited framework for control. Instead we ought to consider control over energy as being defined in much more nuanced terms that reflect its natural qualities and consequences of its use.

A second factor – the location of an energy resource – may determine aspects of its regulation. For example, fossil fuels are physically located in fixed positions in the ground or seabed. Their fixed location determines the spatial parameters for extraction activities and may determine which States(s) can control extraction. On land, such resources are normally subsumed within the doctrine of territorial sovereignty and are at the host State's disposal, at least when they are located wholly within that State's territory. As indicated above, transboundary deposits of oil and gas require cooperative arrangements in order to facilitate exploitation, since they cannot be exploited without affecting other States' territorial rights.[10] Deposits of oil or gas within marine areas are subject to a degree of exclusive control when located in the exclusive economic zone (EEZ) or continental shelf. However, such spaces are subject to additional restrictions that protect the interests of other States or the international

[8] This has already been the subject of litigation in Norway. See Norwegian Supreme Court decision of 27 May 2011. *Norsk Retstidende* 2011, p. 780, reported in K. Lilleholt, 'Wind Power, Ownership, and Neighbours' (2012) 20 *European Review of Private Law* 1159-63.

[9] The contrast with oil is perhaps more equivocal, given the rule of capture. See Daintith (n 6).

[10] See W.T. Onorato, 'Apportionment of an International Common Petroleum Deposit' (1967) 17 *International and Comparative Law Quarterly (ICLQ)* 85-102, and 'Apportionment of an International Common Petroleum Deposit' (1977) 26 *ICLQ* 324-337; D. Ong, 'Joint Development of Common Offshore Oil and Gas Deposits: "Mere" State Practice or Customary International Law?' (1999) 93 *American Journal of International Law* (*AJIL*) 771-804.

community.[11] Location is important to questions of energy supply and transmission. Since energy resources are unevenly distributed and frequently located far from places where the resources are needed, energy or raw materials must be transported around the world. Raw materials for energy production (coal and oil) must be transported to centres of industry, often by sea. Gas must be piped from production facilities to storage sites and end users. Again this may be through undersea pipelines. The same applies to the transmission of electricity through power lines that link energy generators and users. This requires the creation of resilient energy systems or networks that can ensure supplies of energy. Such networks cannot be created by individual States, but require the cooperation of supply-States, user-States and States of transit – hence the priority afforded to energy transit in the Energy Charter Treaty.[12] These regimes require laws that facilitate the creation and maintenance of energy supplies. Thus, location reinforces the point that more nuanced versions of sovereignty or control are required to adapt to the essential attributes of different energy resources.

The third factor influencing energy regulation is the state of technology. Technology affects our ability to access and use certain resources. For example, offshore oil and gas exploration only emerged in the 20th century with the development of technology that allowed oil and gas to be captured. Prior to this, international law had limited concern for the question of control over offshore mineral resources. However, as the capacity to engage in offshore oil and gas activities pushed out to sea and could occur at greater depths, so the law had to adapt to this new reality. Accordingly, the regime of the continental shelf emerged. This function of technology was explicitly acknowledged in the reference to exploitability in determining the outer limits of the legal continental shelf.[13] The outward reach of energy activities will continue with the vast potential of methane hydrate deposits on the deep seabed likely to generate new regulatory challenges in the Area.[14] In the context of wind energy, limitations in storage technology present the most significant obstacles to renewable energy development. Electricity generated can be directed into electricity grids but cannot readily be conserved for use on demand. It must either be rejected or diverted. More sophisticated networks may allow for the diversion of surplus energy between States, but will require cooperation between States to manage fluctuations in supply and demand.[15]

In summary, if we are concerned with the regulation of energy, then we should be concerned with both the control of the sources of energy and the processes whereby energy is transformed from one state to another. We also need to be aware of the way in which the nature of energy resources and their use shapes regulation. As will be demonstrated in the next section, a narrow view of sovereignty, drawn in terms of exclusive control over energy resources, does appear to be suited to these essential considerations. This suggests that questions of energy-resource control and use require more nuanced accounts of sovereignty. Or in other words, it

[11] See below at 00. Cross reference to page of journal

[12] See Energy Charter Treaty (Lisbon, 17 December 1994, entry into force 16 April 1998), reproduced in (1995) 33 *ILM* 360. See below at 00. Cross reference page of journal

[13] Article 1 of the 1958 Convention on the Continental Shelf (Geneva, 29 April 1958, entry into force 10 June 1964) 499 *UNTS* 311.

[14] See R.S. Santos, T. Morato and F.J.A.S. Barriga, 'Increasing Pressure at the Bottom of the Ocean' in A. Mendonca, A. Cunha and R. Chakrabarti (eds), *Natural Resources, Sustainability and Humanity. A Comprehensive View* (Springer, Dordrecht, 2012) 69-81 at p. 75.

[15] See T. Ackermann (ed), *Wind Power in Power Systems* (Wiley, Chichester, 2012), chapters 21 and 22.

supports a functional approach to sovereignty.[16] As discussed below, there is some recognition of the different qualities of energy in legal instruments, such as the reference to "energy cycle" and transit provisions in the Energy Charter Treaty. Indeed, a quick survey of such international instruments supports the point that cooperative and nuanced approaches to sovereignty are required to address questions of energy use.

Observations on Sovereignty

It is trite but nonetheless true to observe that sovereignty is a controversial and contested principle. It is an intellectual construct that may be analysed from a variety of perspectives: historical, economic, political, legal and so on. Each perspective permeates the others. Even within the more limited field of international law, discussions of sovereignty diverge considerably and generate fierce debate.[17] It is not possible to survey and unpack part, never mind all, of this material, but some of its lineaments may be remarked upon in order to help us understand how the notion of sovereignty might apply to energy resources. Two approaches to sovereignty (focusing on its territory or natural resources) are provided in order to illustrate the way in which narrow and broad conceptions of sovereignty might accommodate questions about control over energy. This reaffirms the position advanced that only more nuanced constructions of sovereignty can be used to deal with energy resources.

In perhaps the most general terms, sovereignty refers to the locus of authority within a system. For international law, as a decentralised system of states, that locus is normally considered to be the State. This is reflected in positive international legal doctrine. Thus Judge Huber described sovereignty as independence: "Independence in regard to a portion of the globe is the right to exercise therein, to the exclusion of any other State, the functions of a State".[18] Authority in this view is framed spatially, and is sometimes referred to as "territorial sovereignty". Here sovereignty is exclusionary within the spatial limits of the State, wherein the State may exercise plenary authority. This view of territorial sovereignty is often associated with an absolutist view of sovereignty: the State is either sovereign or it is not.[19] This approach seems to provide a conceptual basis for strong State control of resources; see, e.g., the idea of energy nationalism as discussed by authors such as Bö hme.[20] There is some support for this, since this approach to the allocation of authority to States in this way is often regarded as fundamental to the structure of international law.[21] The general view is that sovereignty over natural resources entitles the State to freely determine how such resources are dealt with under domestic property

[16] This echoes Gavouneli's view of jurisdiction in the law of the sea. M. Gavouneli, *Functional Jurisdiction in the Law of the Sea* (Martinus Nijhoff, Leiden, 2007).

[17] See J. Bartleson, *A Genealogy of Sovereignty* (Cambridge University Press, Cambridge, 1995); S.D. Krasner, *Sovereignty: Organised Hypocrisy* (Princeton University Press, Princeton, 1999); N. Walker, *Sovereignty in Transition* (Hart, Oxford, 2003); M. Koskenniemi, *From Apology to Utopia* (Cambridge University Press, Cambridge, 2005) chapter 4; J. Bartelson, 'The Concept of Sovereignty Revisited' (2006) 17 *European Journal of International Law (EJIL)* 463-74; R. Jackson, *Sovereignty: Evolution of an Idea* (Polity Press, Cambridge, 2007).

[18] *Island of Palmas* case (1928) 2 RIAA 829, at 838.

[19] G. Elian, *The Principle of Sovereignty over Natural Resources* (Sijthoff and Noordhoff, Alphen aan den Rijn, 1979) at 1-10; K.J. Holsti, *Taming the Sovereigns* (Cambridge University Press, Cambridge, 2004) at 114.

[20] D. Bö hme, *EU-Russia Energy Relations: What Chance for Solutions? A Focus on the Natural Gas Sector* (Universitä tsverlag, Potsdam, 2011) at 46-8.

[21] J.L. Brierly, *The Law of Nations* 6th ed. (Oxford University Press, Oxford, 1963) at 162; M. Shaw, 'Territorial Administration by Non-territorial Sovereigns' in T. Broude and Y. Shany (eds), *The Shifting Allocation of Authority in International Law* (Hart, Oxford, 2008) 369-415, at pp. 369-370.

and regulatory regimes.[22] As an intellectual construct, sovereignty does not demand a particular definition or content. Understood thus, the absolutist view is in no way necessary, although it may be regarded as desirable as a means of facilitating good order. It provides a simplified, yet compelling account of a complex world, by carving up the world into non-overlapping territorial units with authority to regulate internal matters, subject to a duty not to harm or interfere in the authority of other States.[23] The actions of other actors, such as individuals, corporations and non-governmental organisations (NGOs), are then linked to these centres of authority. International law rules of attribution and accountability structure the legal relationships outwards from the central hub of sovereignty. This view is reflected in certain rules of international law that retain strong normative influence. Thus Article 2(4) of the United Nations Charter requires States to refrain from the threat or use of force against the territorial integrity or political independence of other States, and Article 2(7) provides that "[n]othing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state or shall require the Members to submit such matters to settlement under the present Charter..."[24]

Despite the existence of specific rules that echo an absolutist approach to sovereignty, this approach is considered by the most commentators to bear little resemblance to reality. For example, Slaughter notes two deficiencies with this view of sovereignty: the ineffectiveness challenge, which highlights that States cannot pursue their objectives without some degree of political or economic support from other States, and the interference challenge, which recognises that the exclusive domestic jurisdiction of States is frequently infringed in practice.[25] These arguments challenge the exclusionary idea of sovereignty. Even those holding to the classical positivist position accept that sovereignty has limits and so it is described as the "fullest rights over territory *known to the law*".[26] Thus the law necessarily delimits the scope of sovereignty, and the door is quickly open to relative accounts of sovereignty. Indeed, absolute sovereignty is under increasing challenge from those that regard sovereignty as a variable or relative concept, or who advocate a view of sovereignty as a status realised through participation in the international system.[27] Here (external) sovereignty is regarded as contingent on the existence of an (international) society and it is from this society that authority is drawn.[28] At present, it seems that relative explanations of sovereignty are in the ascendancy.[29]

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[22] See for example, Y. Omorogbe and P. Oniemola, 'Property Rights in Oil and Gas under Domanial Regimes' in McHarg, et al. (eds) (n 6) 115-139, at p. 115.

[23] B. Kingsbury, 'Sovereignty and Inequality' (1998) 9 *EJIL* 599-625, at pp. 610-11.

[24] United Nations Charter (San Francisco, 26 June 1945, entry into force 26 October 1945) 892 *UNTS* 119.

[25] A.M. Slaughter, 'Sovereignty and Power in a Networked World Order' (2004) 40 *Stanford Journal of International Law* 283-327 at pp. 284-5.

[26] Brierly (n 21) at 162 (emphasis added).

[27] A. Chayes and A.H. Chayes, *The New Sovereignty. Compliance with International Regulatory Agreements* (Harvard University Press, Harvard, 1998) at 27.

[28] Admittedly, this pithy observation glosses over considerably more complexities than space permits addressing here. Here it suffices to observe that law is viewed as socially contingent, and so society rather than the individual State is the source of legal authority. See Judge Anzilotti in the *Customs Regime between Germany and Austria* (1931) PCIL, Se. A/B, No. 41, 57. On the basis of authority, see further P. Allott, 'Mare Nostrum: A New International Law of the Sea' (1992) 86 *AJIL* 764-87. See also some of the observations in J. d'Aspremont, *Formalism and the Sources of International Law - A Theory of the Ascertainment of Legal Rules* (Oxford University Press, Oxford, 2011) chapter 1.1.

[29] See the discussion by G. Simpson, *Great Powers and Outlaw States. Unequal Sovereigns in the International Legal Order* (Cambridge University Press, Cambridge, 2004) chapter 2.

In contrast to the traditional view of sovereignty, within accounts of relative sovereignty, authority is diffuse and manifested through various interactions. Accordingly, it is possible to view the application of sovereignty to natural resources as a series of jural relations concerned with, *inter alia*, the right to possess, use, manage, and enjoy the benefits derived from territory and natural resources therein. And sovereignty is not just about rights; it entails duties. In order to protect the interests of other actors, States are subject to certain duties of non-harmful use or cooperation in respect of territory and natural resources. Sovereignty is meted out and dealt with not in absolute terms, but by way of variable, individual transactions. Territory and the resources therein may be jointly managed by States, subject to trusteeship regimes, or bound by "use-rights" in favour of other States.[30] Foreign investment may be secured by exclusive rights to natural resources, and guaranteed against expropriation.[31] These dealings may limit how authority is exercised temporarily. They may result in the same resource being subject to multiple uses and degrees of control by various actors. A good example of this is the treatment of fisheries under international, European Union (EU) law and domestic law.[32] Although commenting upon how international law deals with property rights in respect of natural resources, Redgwell's brief survey of international instruments and cases demonstrates how international law structures and limits control of resources in terms analogous to property.[33] This reaffirms the above point that sovereignty over resources is constructed in terms of discrete jural relations. An important element of this is the role played by international human rights law and the protection of property as a human right.[34] Here enjoyment of certain rights is directly opposed to the State, indicating a direct concern with needs or interests of individuals, rather than States. This view of sovereignty permits a more calibrated understanding of the ways in which States act, and more closely resembles how natural resources or energy are regulated. Furthermore, whilst it does not necessarily support the type of conceptualization of energy sovereignty rooted in individual choice and control,[35] it is at least consistent with its goal of securing individual access to essential energy needs.

Traditional conceptions of sovereignty, as exclusive control over a portion of the globe, are simply irreconcilable with the way the world works today. States are increasingly interdependent, socially, politically and economically, and this is reflected in law. Many energy resources are fluid, but part of expensive, complex, and fixed transnational networks. This is particularly the case for marine renewable energy resources, which draw upon components of global systems, and whose use cannot be confined to the territory of single States. The networks necessary to make use of renewable energy need to be resilient and secure. This means that more nuanced notions of sovereignty are required to support and sustain energy use. However, more recent accounts of sovereignty tend to either contest the nature of sovereignty or atomise it, examining it as a series of localised jural relations as manifest in particular contexts. The sophistry of such approaches may be better adapted to reality and more flexible, but this renders it difficult to apprise ourselves of how effectively and fairly access to and use of energy are determined at the global level. It collapses into highly localised relationships. The main problem

[30] See further R. Barnes, *Property Rights and Natural Resources* (Hart, Oxford, 2009) at 222-8.
[31] See M. Sornarajah, *The International Law on Foreign Investment*, 3rd ed. (Cambridge University Press, Cambridge, 2010) chapter 10.
[32] See generally, R. Churchill and D. Owen, *The EC Common Fisheries Policy* (Oxford University Press, Oxford, 2010).
[33] C. Redgwell, 'Property Law Sources and Analogies in International Law' in McHarg, et al. (eds) (n6), at 100-12.
[34] *Ibid*., at 105-6.
[35] See discussion at 00 below. (cross reference to current p 12 and FoE)

with an account of energy sovereignty drawn in terms of relative sovereignty is that it may lack coherence. It is then exposed to criticism for being descriptive rather than normative. International law, like any other social system, is a system of informed and patterned behaviour. This indicates the need for principles or points of reference to determine the legitimacy of specific rules that transcend the individual rules. In short, it requires sovereignty to be justified. Before considering how this might be approached, it is helpful to examine how questions of energy sovereignty are approached in the literature and the main legal texts. This tends to support a more flexible approach that can adapt to the nature of energy and its uses.

Energy Sovereignty in Context

Any consideration of energy sovereignty cannot take place in a vacuum. It must acknowledge how policies, laws and debates have evolved, the meaning and relationship of core terms and concepts, and the place of law in shaping any debates. This part examines, first, how the term "energy sovereignty", as well as cognate concepts such as energy security and energy nationalism, is used and how it has developed in the context of questions about access to traditional energy resources.[36] Noting the complexity of such matters, it demonstrates the main relevance of international law to debates about control of energy. A review of how specific instruments, including the UN Convention on the Law of the Sea (LOSC) and the Energy Charter Treaty, actually address questions of energy sovereignty, shows how more nuanced approaches to energy sovereignty are either supported or required by international law.

Use and Development of the Concept of Energy Sovereignty

Use of the term "energy sovereignty" is growing, although its precise meaning is not clear, especially when viewed from a legal perspective. Friends of the Earth define the term as "the right of people to have access to energy and to choose sustainable energy sources and consumption patterns that will lead them towards truly sustainable societies."[37] The idea is firmly located in the discourse of rights and associated with similar movements/concepts such as "food sovereignty".[38] It is thus about empowering individuals and ensuring that resources are available to meet needs. In contrast, Bö hme uses the phrase to describe the approach of energy-producing countries to secure control over natural resources, and especially to resist exploitation of these resources under free market regimes.[39] This approach is also known as "energy nationalism",[40] and it is closely linked to the more frequently used term "energy security". This

[36] The term "energy sovereignty" is preferred since this accommodates a wider range of perspectives than the more commonly used term "energy security".
[37] Friends of the Earth International. *Annual Report 2013*, at 3, available at http://www.foei.org/wp-content/uploads/2014/06/FoEI-Annual-Report-2013.pdf. This and subsequent online resources were accessed 1 September 2014.
[38] N. Bellinger and M. Fakhri, 'The Intersection Between Food Sovereignty and Law' (2013) 28 *Natural Resources and Environment* 45-48; M. Windfuhr and J. Jonsén, *Food Sovereignty: Towards Democracy in Localized Food Systems* (Intermediate Technology Working Group Publishing, Rugby, 2005) at 21.
[39] Bö hme (n 20).
[40] D. Bochkarev and G. Austin, *Energy Sovereignty and Security: Restoring Confidence in a Cooperative International System*. East West Institute Policy Paper 01/2007, at 2. Available at http://www.ewi.info/idea/energy-sovereignty-and-security-restoring-confidence-cooperative-international-system.

seeks to ensure that the State controls access to energy resources.[41] The IEA defines energy security as the "uninterrupted availability of energy sources at an affordable price."[42] Similarly, Barton *et al.* define it as "a condition in which a nation and all, or most, of its citizens and businesses have access to sufficient energy resources at reasonable prices for the foreseeable future free from serious risk of major disruption of service".[43] Whilst these approaches do not deny the interests of individuals, they place the State at the centre of debates about ensuring energy security. For present purposes it is not necessary to synthesise a common meaning of energy sovereignty, but merely to note that nuances in any definition of the core concept reflect different views on how to address fundamental questions about who controls energy, and how best to structure such control in order to meet the needs or interests of energy users. It may also be observed that different views of energy sovereignty are susceptible to different accounts of sovereignty, as explored above.

Energy sovereignty is not a new concern. Control of energy resources has been the object of both national/international policy and academic study for much of the twentieth century.[44] This has mainly focused upon the supply of oil as the means of sustaining military machines and industrial development. International lawyers will be familiar with how the desire to secure access to oil supplies provoked the Truman Proclamation of 1945,[45] influenced the development and regulation of oil concessions from the 1950s,[46] and came to the fore of debates about international peace and security with the emergence of the Organization of Petroleum Exporting Countries (OPEC) in the 1970s.[47] The post-World War II process of decolonisation generated considerable literature on questions of sovereignty over natural resources.[48] It also highlighted the importance of international cooperation in meeting energy supplies, given the dislocation of many energy resources from the main consumers of energy. To a large extent, it is oil (and gas) which have shaped discussions about the regulation of energy supply, and in particular exploration, production and supply lines, as well as the regulation of oil and gas markets. With increasing dependence on gas and electricity, there is now greater need for cooperation in developing, maintaining and managing resilient energy-supply networks. Unlike oil and coal, gas and electricity are particularly dependent upon fixed and complex networks of cables and pipelines. In recent decades, the regulation of energy has come under increased

[41] See generally, G. Kaft and A. Korin (eds), *Energy Security Challenges for the 21st* Century (Greenwood, Santa Barbara, 2009); R. Youngs, *Energy Security. Europe's New Foreign Policy Challenge* (Routledge, London, 2009); G. Bahgat, *Energy Security and Interdisciplinary Approach* (Wiley, Chichester, 2011).
[42] See: http://www.iea.org/topics/energysecurity/subtopics/whatisenergysecurity/.
[43] B. Barton, C. Redgwell, A. Rønne, and D. N. Zillman, 'Introduction' in B. Barton, C. Redgwell, A. Rønne, and D. N. Zillman (eds), *Energy Security. Managing Risk in a Dynamic Legal and Regulatory Environment* (Oxford University Press, Oxford, 2004) 3-14 at 5.
[44] D.R. Bohi and M.A. Toman, *The Economics of Energy Security* (Kluwer, Dordrecht, 1996); D. Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World* (Penguin, London, 2011).
[45] A. Hollick, 'US Oceans Policy. The Truman Proclamation' (1976) 17 *Virginia Journal of International Law* 23-55.
[46] M.A. Mughraby, *Permanent Sovereignty over Oil Resources: a study of Middle East oil concessions and change* (Middle East Research and Publications Centre, Beirut, 1966).
[47] J.J. Paust and A. Blaustein, 'The Arab Oil Weapon. A Threat to International Peace' (1974) 68 *AJIL* 410-439.
[48] See, for example, G. Elian, *The Principle of Sovereignty over Natural Resources* (Sijthoff & Noordhoff, Alphen aan den Rijn, 1979); K. Hossein and S.R. Chowdry, *Permanent Sovereignty over Natural Resources: Principles and Practice* (Pinter, London, 1984); G. Abi-Saab, 'Permanent Sovereignty over Natural Resources and Economic Activities' in M. Bedjaoui (ed), *International Law: Achievements and Prospects* (Martinus Nijhoff, Dordrecht, 1991) 597-618; N. Schrijver, *Sovereignty over Natural Resources. Balancing Rights and Duties* (Cambridge University Press, Cambridge, 1997).

scrutiny from an environmental perspective, with the realisation of the impacts of global warming and the move towards renewable energy supplies. This has begun to generate a distinct legal literature, and efforts to place energy issues within the broader paradigm of sustainable development.[49] Whilst this has not lessened the importance of traditional concerns about the control of energy resources and supplies, it has demonstrated the increasing complexity of factors that need to be accounted for in energy regulation.

International Law and the Regulation of Energy

The regulation of energy is undoubtedly complex. Typically regulation occurs through technical rules of domestic law which focus on discrete aspects of energy production systems: exploration, exploitation, production and supply. These are overlaid by rules on planning, health and safety, environmental protection, finance and investment, taxation and so on. In part the complexity is a product of the way the domestic law has developed. Thus, it has been observed that energy law has evolved incrementally, instrumentally, and in a disjointed fashion,[50] and that it focuses on adequate supply, rather than on efficient or equitable use or environmental consequences. At the risk of over-simplifying trends in regulation, approaches have evolved (or perhaps revolved) under domestic law from regimes focused upon State-centred control to deregulated market-based approaches, with more recent efforts that seek to blend public and private regulatory approaches.[51] Domestic regimes and regulatory approaches are dynamic systems, continuously evolving novel and differentiated tools to regulate energy activities.

Leaving aside the complex relationship between domestic and international law, it remains necessary for international law to provide a sufficiently coherent and certain basis for operation of domestic regulatory regimes, whilst also ensuring that such regimes respect necessary limits dictated by international law.[52] More specifically, international law has a central role to play in six aspects of energy regulation. First, it determines, or provides the framework for, how transboundary or common resources are to be utilised. At root these are essentially questions about who controls a non-exclusive resource. Commentators have long been concerned with how international law should deal with common deposits of oil and gas reserves.[53] However, renewable resources may present even more complex problems of international coordination and cooperation. For example, wind and tidal energy are the products of common-pool resources which result from complex natural processes that reach beyond the

[49] A.J. Bradbrook and R.L. Ottinger (eds), *Energy Law and Sustainable Development* (IUCN, Gland, 2003); R. Lyster and A.J. Bradbrook, *Energy, Law and the Environment* (Cambridge University Press, Cambridge, 2006); H.T. Anker, B.E. Olsen and A. Rønne (eds), *Legal Systems and Wind Energy. A Comparative Perspective* (Kluwer Law International, Alphen aan den Rijn, 2009); R.L. Ottinger, *Renewable Energy Law and Development. Case Study Analysis* (Edward Elgar, Cheltenham, 2013).

[50] N.A. Robinson, 'Foreword' in Bradbrook and Ottinger (eds), *ibid.*, vii - xiii at p. vii.

[51] B. Barton, L. Barrera-Hernández, A.R. Lucas and A. Rønne, 'Introduction' in B. Barton, L. Barrera-Hernández, A.R. Lucas and A. Rønne, (eds),*Regulating Energy and Natural Resources* (Oxford University Press, Oxford, 2006) 3-10, at 3-6.

[52] See further S.W. Schill, 'The interface between international and national energy law' in K. Talus (ed),*Research Handbook on International Energy Law* (Edward Elgar, Cheltenham, 2014) at 44-76; A. Bradbrook, 'The Development of Renewable Energy Technologies and Energy Efficiency Measures through Public International Law' in D. Zilman, C. Redgwell, Y.O. Omorogbe and L.K. Barrera-Hernández (eds), *Beyond the Carbon Economy. Energy Law in Transition* (Oxford University Press, Oxford, 2008)109-32; C. Redgwell, 'International Energy Security' in Barton, et al. (eds), (n 43) 17-47.

[53] See Onorato (n 11); and Ong (n 10).

exclusive control of any State.[54] As such they require coordinated regulation between States in accordance with the natural patterns of the energy system, as well as the consequences of its capture. This is particularly important in the marine environment, where the interplay of States' rights and duties is more complex. Second, international law may constrain the ability of States to control or interfere in energy production activities, particularly through international investment law.[55] Third, international law facilitates access to and supply of energy resources. Many energy resources are located far from the users of energy and so international networks of supply (pipelines, cables and transport routes) are required to support the transfer of energy and raw materials. Again, this is important in a marine context where the oceans and the seabed provide a medium for such networks. Fourth, international law provides the basic framework for controlling the transboundary consequences of energy use – i.e., transboundary pollution. Fifth, international law coordinates responses to global challenges, and in particular climate change. Last, it may facilitate the coordination of domestic energy law regimes and policies, including finance, technological support and training for developing countries.

In these six categories, international law has much to say on some aspects of energy sovereignty, particularly transboundary pollution [56] and protection of investments from expropriation. [57] In the context of the marine environment, a useful overview of such instruments, as well as domestic measures, is contained in the Report of the UN Secretary-General on *Oceans and Law of the Sea 2012*.[58] For example, the transport of oil and gas resources, which is central to questions of energy sovereignty, is subject to numerous provisions of the LOSC dealing with pollution,[59] as well as MARPOL,[60] regional pollution agreements,[61] and liability regimes.[62] Offshore exploration activities are also addressed through the LOSC,[63] as well as regional pollution regimes. Furthermore, the disposal of energy by-products, such as radioactive waste, is controlled through instruments such as the London Dumping Convention[64] or the Basel Convention.[65] However, as indicated below, it has surprisingly little to say, at least

[54] On the domestic aspects of this see: Lifshitz-Goldberg (n 7). On the international law aspects of common-pool resources, see Barnes (n 30).
[55] See generally R. Dolzer and C. Schreuer, *Principles of International Investment Law* (Oxford University Press, Oxford, 2012); Sornarajah (n 31); S.L. Escarcena, *Indirect Expropriation in International Law* (Edward Elgar, Cheltenham, 2014).
[56] See P. Birnie, A. Boyle and C. Redgwell, *International Law and the Environment* 3rd ed. (Oxford University Press, Oxford, 2009).
[57] See for example the authors cited in (n 55).
[58] UN Doc. A/67/79, 4 April 2012.
[59] United Nations Convention on the Law of the Sea (Montego Bay, 10 December 1982, in force 16 November 1994), 1833 *UNTS* 396. See generally, Part XII and, in particular, Article 211 on ship-source pollution.
[60] International Convention for the Prevention of Pollution from Ships, as Modified by the Protocol of 1978 Relating Thereto (London, 2 November 1973 and 17 February 1978, entry into force 2 October 1983),1340 *UNTS* 62.
[61] See for example, Article 4 of the Convention for the Protection of the Marine Environment of the North-East Atlantic 1992 (Paris, 22 September 1992, entry into force 25 March 1998), (1993) 23 *LOSB* 32 (OSPAR Convention).
[62] See the Convention on Civil Liability for Oil Pollution Damage 1992 (London, 27 November 1992, entry into force 30 May 1996), 973 *UNTS* 3.
[63] See LOSC, Article 194(3)(c).
[64] Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London, 29 December 1972, entry into force 30 August 1975), 1046 *UNTS* 138.
[65] Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989 (Basel, 22 March 1989, entry into force 5 May 1992), (1989) 28 *ILM* 657.

directly, on the meaning of energy sovereignty or sovereignty over energy resources in the marine environment.

Four law of the sea instruments expressly refer to energy in the context of pollution,[66] but of these, only the LOSC directly addresses the issue of sovereignty over energy. Article 56(1)(a), provides that coastal States have: "*sovereign rights* for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the (exclusive economic) zone, such as the production of energy from the water, currents and winds".[67] This is, however, qualified by Article 56(2), which requires coastal States to exercise such rights with due regard to the rights and interests of other States, and in a manner compatible with the LOSC. This places a balancing of interests at the heart of any questions about energy sovereignty.[68] There is some debate over the meaning of sovereign rights. O'Connell has noted the propensity of such rights to consolidate in sovereignty.[69] Although not dealing with the question of sovereignty, Article 60(1) is important since it provides the basis for regulating structures used to access marine energy resources in the EEZ. Coastal States are allocated *exclusive rights* to construct, operate and use such structures.[70] The precise nature of the right is not specified, although it presumably flows from the State's general sovereign rights over resources in the EEZ. Article 60(2) subsequently refers to exclusive jurisdiction to regulate such structures, which includes prescriptive and enforcement jurisdiction. Decisions concerning the placement and operation of such structures must take into account navigational concerns, whilst their removal must have due regard to fishing and protection of the marine environment.[71]

The LOSC is silent on the control of energy in the territorial sea. Since this is described as a zone to which the sovereignty of the State extends, sovereignty over energy resources would be treated in the same way as on land territory.[72] In practice, there is no doubting the existence of exclusive coastal State authority over energy resources, either mineral or renewable. This is subject to the preservation of third-State navigational interests through the regime of innocent passage.[73] This does not require sharing or the use of resources in a particular way; merely that the location of extraction/generation facilities does not hamper or deny the right of passage.[74]

Control over energy supply is not directly mentioned in the LOSC, but is covered by Article 79, which provides that "*All* States are entitled to lay submarine cables and pipelines on

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[66] Energy is included within the definition of pollution in four instruments. See Article 2(a) of the Convention for the Protection of the Marine Environment and Coastal Region of the Mediterranean, as amended (Barcelona, 16 February 1976, and amended 10 June 1995, entry into force 12 February 1978 and 9 July 2004, respectively),(1996) 31 LOSB 65; Article 2(1) of the Convention on the Protection of the Marine Environment of the Baltic Sea Area 1992 (Helsinki, 9 April 1992, entry into force 17 January 2000), 2099 *UNTS* 197; Article 1(d) of the OSPAR Convention; Article 1(1)(4) of the United Nations Convention on the Law of the Sea 1982.

[67] Similarly, Article 77 on the continental shelf provides coastal States with exclusive sovereign rights as regards natural resources. However, this is focused on mineral resources of the seabed and subsoil, and does not concern renewables.

[68] Regard may also be had to Article 59 which requires that conflicts about unattributed rights are resolved on the basis of equity in light of relevant circumstances and the interests of the parties and the international community.

[69] D.P. O'Connell, *The International Law of the Sea* (Clarendon Press, Oxford, 1982) at 481.

[70] Article 60(1). These provisions extend to the continental shelf, according to Article 80.

[71] Article 60(7) and (3), respectively.

[72] See Article 2.

[73] Articles 17-19.

[74] Article 24.

the continental shelf". This is crucial to the creation and maintenance of energy networks, and as with the above provisions, it also includes a "balancing of interests", which permits the coastal State to take reasonable measures to ensure the enjoyment of its resource-related rights.[75] The freedoms of the high seas include the freedom to lay submarine cables and pipelines and the freedom to establish installations.[76] This would apply to wind turbines and other renewable energy installations. Both freedoms are subject to the provisions of Part VI on the continental shelf, where this extends under the high seas. Thus, only the coastal State may authorise or operate platforms fixed to the seabed of its continental shelf where this extends beyond 200 nm.[77] It is questionable whether or not this includes floating devices used to generate energy. However, technological and economic limitations mean that such devices are not likely to operate in the near future and render questions about their regulation on the highs seas somewhat moot at present.[78] More significant is Article 87(2) which requires both freedoms to be exercised with due regard to the interests of other States.[79] As in the EEZ, States' rights are subject to an important, if somewhat general, balancing of interests with those of other States.

This brief overview of the LOSC indicates that beyond the territorial sea, any rights in respect of energy resources, or the means for providing energy supplies, are inherently subject to a balancing of interests in light of other States' interests and potentially competing uses of sea space. The exercise of sovereign rights, jurisdiction or "freedoms" is more strongly linked to the interest of other States or the international community. This supports a more cooperative approach towards the regulation of energy resources and supplies in the marine environment. In particular, the requirement of due regard requires States to be aware of and take into account the interests of other States when exercising authority. Furthermore, it may require positive cooperation, and possibly the pursuit of mutually beneficial outcomes.[80] Despite the articulation of concepts that facilitate cooperative approaches, the LOSC offers little guidance as to the way in which such rights are to be exercised in specific contexts concerning energy development activities and further research is required to explore and explain how such a balancing of interests ought to work.

The second main reference to energy sovereignty in a multilateral instrument occurs in the Energy Charter Treaty (ECT). The ECT aims to promote cooperation in the energy field and the development of an efficient energy market throughout Europe.[81] Its remit is generally limited to investment protection, rather than the regulation of sovereignty or the wider range of energy-use activities.[82] The ECT applies to contracting States' territories, including territorial waters and sea and seabed areas where the State exercises sovereign rights and jurisdiction.[83] Article 18 of the ECT declares States to have "sovereignty and sovereign rights over energy

[75] Article 70(2) and (3).
[76] Articles 87(c) and (d), respectively.
[77] Article 80 cross-references Article 60.
[78] Interesting questions arise as to the extent that the provisions on the common heritage of mankind in Part XI, as well as the provisions of the 1994 Implementation Agreement, might apply to renewable projects. See the Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (New York, 28 July 1994, entry into force 28 July 1998) 1836 *UNTS* 42.
[79] Article 87(2).
[80] *Fisheries Jurisdiction case* (United Kingdom v. Iceland) Merits, Judgment [1972] ICJ Reports 3, para. 72.
[81] Article 2 of the ECT, and Title I of the Concluding Document of the Hague Conference on the European Energy Charter.
[82] See generally, T. Wälde (ed), *The Energy Charter Treaty. An East-West Gateway for Investment and Trade* (Kluwer Law International, London, 1996).
[83] Article 1(10).

resources". This is to be exercised in accordance with and subject to the rules of international law. Although the ECT is committed to the development of energy markets, it does not limit a State's authority and discretion as to how it structures ownership of energy resources. Although the ECT "promotes access to resources", this hortatory requirement does not trump sovereignty and leaves the ownership of resources unaffected.[84] This is reaffirmed by Article 18(3), which provides that "[e]ach state continues to hold in particular the rights to decide the geographical areas within its Area to be made available for exploration and development of its energy resources, the optimalization [sic] of their recovery and the rate at which they may be depleted or otherwise exploited, to specify and enjoy any taxes, royalties or other financial payments payable by virtue of such exploration and exploitation, and to regulate the environmental and safety aspects of such exploration, development and reclamation within its Area, and to participate in such exploration and exploitation, inter alia, through direct participation by the government or through state enterprises."[85] The ECT pays lip service to environmental concerns with a sweeping list of factors to be taken into account. Article 19 comprises a list of eleven hortatory action points that request parties to "promote", "have regard to" or "take into account" certain environmental matters. For the most part, objectives like public participation, the polluter-pays principle, the use of environmentally sound technologies, and environmental impact assessment, are addressed in greater detail in other instruments.[86]

Following on from the above discussion of the nature of energy, it is to be noted that there is some recognition of the different qualities of energy in the ECT. Thus it refers to the regulation of energy throughout the "energy cycle", meaning from prospecting, though production and consumption, to conversion and supply, and ultimately disposal.[87] However, as noted above, this provision is framed in hortatory terms. If we are to realise a meaningful account of energy sovereignty, then such an account must reflect a broader understanding of the whole energy cycle and its complexities. To some extent the ECT provisions on transit already do this.[88] Thus, States are required to make necessary provisions to facilitate the transit of energy materials and products, which helps address the concerns re the displacement of the location of energy resources from users. It is also reflected in the broader range of environmental and liability laws that govern human activities. In this sense authority to govern energy is already diffused across the system of international law. This conclusion might not be novel, but it serves to reinforce the interconnectedness of regulatory matters. Energy law cannot be viewed apart from wider and related legal regimes.

Nuclear energy apart, there has been little attention to marine energy generation in multilateral fora. This was noted in the Report of the UN Secretary-General on *Oceans and the Law of the Sea 2012*.[89] At the UN level, ECOSOC established a number of standing committees dealing with aspects of natural resources and renewable energy, although these have since been

[84] Article 18(2).
[85] See also Article 2 of Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons. OJ L164, 30 June 1994, 3-8; Article 4 of Directive 2009/31/EC on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006. OJ L 140, 5 June 2009, at 114-135.
[86] See further C. Shine, 'Environmental Protection under the Energy Charter Treaty' in Wälde (ed), (n 82) 520-45.
[87] Article 19.
[88] Article 7.
[89] Secretary General (n 58) at para. 26.

subsumed within the work of the Commission on Sustainable Development.[90] In 2009, the International Renewable Energy Agency (IRENA) was established with the objective of promoting "the widespread and increased adoption and the sustainable use of all forms of renewable energy."[91] Like the UN bodies, IRENA's mandate is generally limited to facilitating dialogue, promoting research and education, and developing policy recommendations. Perhaps unsurprisingly, most binding international agreements concerned with energy production have emerged in the context of transboundary hydrocarbon exploitation.[92] This seems to be a most fertile area for further research, since these agreements will reveal much about States' perspectives on energy sovereignty. These bilateral treaties do not generally address energy sovereignty directly, but are instead focused on the practical aspects of development, focusing on ensuring the optimal exploitation of resources. Of course, one should be careful about generalising from agreements designed between different parties and in different contexts. However, as Bankes's analysis shows, they are very much designed to provide a secure basis for commercial development. They also provide evidence of an increasing institutionalisation of hydrocarbon development.[93] In practice, this normally entails some degree of compromise by States with claims to the resource, and some limitation on unilateral exploitation, either by way of joint authorisations or, at least, authorisations that follow defined procedures. This reveals that a more nuanced approach to questions of sovereignty or sovereign rights over energy resources prevails in practice.

Justifications of Sovereignty over Marine Energy Resources and Supplies

Justificatory considerations have implications for specific rules on the use of resources, so a fuller appreciation of the various intellectual justifications for control can enrich our understanding of the best way in which energy resources can and should be regulated. The main justification associated with sovereignty is that of order and stability of the system.[94] In the context of resources, and still especially in that part of it dealing with marine resources, much of the literature on the justification of sovereignty over natural resources lacks depth. Typically this focuses on thin justifications based upon redistribution of wealth during and post-decolonisation.[95] This can be contrasted with the depth of the literature on the theoretical justification of property and property rights over natural resources.[96] This literature presents a plurality of justifications for ownership, cast in terms of liberty, natural rights, utility, order, and efficiency, each with different implications for determining entitlement to own and use things.

Given the need to develop a strong normative basis for the control of energy resources, it is suggested that recourse to more fundamental justificatory theories is desirable. The most

[90] See N. Schrijver, *Development Without Destruction. The UN and Global Resource Management* (Indiana University Press, Indiana, 2010) at 141-2.
[91] Available online at http://www.irena.org/documents/uploadDocuments/Statute/IRENA_FC_Statute_signed_in_Bonn_26_01_2009_incl_declaration_on_further_authentic_versions.pdf.
[92] See further N. Bankes, 'Recent Framework Agreements for the Recognition and Development of Transboundary Hydrocarbon Resources' (2014) 29 (4)) *International Journal of Marine and Coastal Law* XX-XX, this issue.
[93] *Ibid.*, at 00.
[94] See Jackson (n 17) at 111.
[95] See for example Schrijver (n 48) at 20-5.
[96] See J.W. Hamilton and N. Bankes, 'Different Views of the Cathedral: The Literature on Property Law' in McHarg, et al. (n 6) 19-59 at 46-52. Also, Barnes (n 30) at 29-61.

important questions concerning energy are questions related to control. Which States should control energy? How should States control energy? What are States entitled to do with the energy? Are there any limits on States' use of energy? These are the same sort of questions that we ask about control, or ownership, of any resource by individual or community; should resources be excludable or shared, and if so, why? Therefore, at least for analytical purposes, it is informative to draw upon these justificatory theories. If we cast sovereignty in these terms, we can see how different justifications open up new avenues for answering questions about future resource control and supply. The above justification of sovereignty based upon order is of only partial use in providing an analytical framework for exploring these questions. As a way forward, we should consider alternative justifications of energy sovereignty. To provoke some thoughts on the matter, the final part of the article explores a natural rights-based justification for sovereignty and its possible implications for marine energy resources and supplies.

It may be observed, first, that this analytical technique is not antithetical to international law. Natural rights are those rights inherent in a certain agent by virtue of their existence, and which are not contingent on the law or custom or some other forms of positive authority. The idea that certain rights are naturally inherent to States has a long tradition. Thus, Vattel notes that the rights of states are "naturally the same as those of any other state."[97] Later, the

> general and fundamental rule of our duties towards ourselves is, that every moral being ought to live in a manner comfortable to his nature… A nation is a being determined by its essential attributes, that has its own nature, and can act in conformity with it… The Law of Nature prescribes it certain duties.[98]

Whilst a natural-rights view of territorial sovereignty is dismissed by Shaw,[99] who explicitly sees it as confusing concepts of property and sovereignty, it is not without its adherents.[100] Natural law-based approaches still retain some currency in explaining the way in which international law works.[101]

The basic justification of sovereignty as a natural right runs thus: States by virtue of their existence as moral agents enjoy exclusive authority over the physical space that constitutes the State. The existence of this authority precedes the existence of any conventional rules governing the status of the State, and entails certain rights and duties that must be recognised within subsequent conventional rules. What consequences does this justification of sovereignty entail? As noted, a starting point is to regard the physical space of the state as an essential component of its agency. Thus territory and the resources therein, including energy resources, comprise part of the State and should not be separated from it.

At first glance this seems to support the claim of energy sovereignty linked to energy nationalism. The analogy is the agency of individual persons and "ownership" of their body, of

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[97] E. de Vattel, *The Law of Nations* (S. & E. Butler, Northampton, MA, 1805), Book I, Chapter I, §. 4.
[98] *Ibid*., at §. 13.
[99] M. Shaw, *Title to Territory* (Ashgate, Aldershot, 2005) at 17.
[100] Nussbaum indicates that early scholars such as Martens viewed states as possessing certain natural rights: territorial sovereignty, independence, equality of treatment. A. Nussbaum, *A Concise History of the Law of Nations* (MacMillan, New York, 1953) at 183; also, E. Lauterpacht (ed), *International Law, Being the Collected Papers of Hersch Lauterpacht* vol. 1 (Cambridge University Press, Cambridge, 1970) at 76; L. Henkin, *International Law, Politics and Values* (Martinus Nijhoff, Dordrecht, 1995) at 40.
[101] S. Hall, 'The Persistent Spectre: Natural Law, International Order and the Limits of Legal Positivism' (2001) 12 *EJIL* 269-307.

which they cannot be deprived.[102] Of course, the analogy is not complete, since States do not necessarily require a particular amount of "physical form" to exist, and so the notion of territory as a fundamental requirement of statehood is notoriously fluid.[103] States are social constructs rather than physical agents, and if some physical capacity or need for energy resources is not a necessary part of this construct, then the claim to ownership or control is broken. Moreover, it ignores the broader and more complex dependency of States on each other to service their needs, only one of which is energy. States need things that may only exist within the "body" of other States, or must be transited through other States. Thus States, or ordinarily their citizens and private companies, necessarily trade in goods and services that cannot be produced locally, or that can be procured more cheaply elsewhere. Arguably, securing transit and trade becomes more, or as important, as the reliance upon rules that allocate control based upon the initial location of energy resources. This belies a special significance attaching to the mere physical components of the State, and suggests that resources can be detached or used apart from the State for good reason, as determined by the needs of the wider community of States. This detachment or rather insertion of collective interests was highlighted in the above discussion of the balancing of interests that is inherent to the exercise of sovereign rights over marine resources, as well as the transit provisions of the ECT.

This basic approach to sovereignty as a natural right presents further difficulties when applied to marine energy resources, because maritime spaces beyond the territorial sea or continental shelf (as a natural prolongation of the landmass)[104] are not part of the State as such, but rather areas within which the State may extend its sovereign rights or jurisdiction. Arguably, this means that the simple natural rights-based justification cannot justify exclusive control over marine renewable energy resources derived from the water column or the wind, or other complex natural systems.[105] One needs to further justify claims to such resources in other terms.

An extension of the natural-rights approach contends that when States vest their efforts in something, they thereby reduce it to their sovereignty. In some ways, this might be conceived of as a rule of capture for States. The analogy is the labour-based justification of property.[106] However, the simple form of this justification as applied to territorial sovereignty generates undesirable consequences, since it essentially justifies a first-occupation view of sovereignty (possibly conquest or annexation). One may note here the controversy generated by Russia's claims to the North Pole.[107] This first-occupation approach is now discredited, but more plausible versions (the so-called labour/desert approach) require the labour to be socially productive,. Thus a person's or a State's claim to control of "external" things can be justified, for example, through the introduction of socially productive effort: extraction, regulation, use,

[102] Another way to conceive of this is to view States as communities of people who require physical space and resources to exist. These basic individual needs are then extrapolated to the level of the State as an organisational body. Of course, this is no longer an account based on natural rights, but rather one based upon need, and raises further questions about why the persons living in a particular space should have their needs met whilst others are not so entitled.

[103] 'There is … no rule that the land frontiers of a State must be fully delimited and defined." *North Sea Continental Shelf case* [1969] ICJ Report 4 at p. 22.

[104] See the Truman Proclamation 1945, reproduced in S.H. Lay, R. Churchill and M. Nordquist (eds), *New Directions in the Law of the Sea*, vol. 1. (Oceana Publications, Dobbs Ferry, NY, 1973) at 106-7.

[105] E.g., ocean thermal energy or salinity gradient energy. See IRENA, *Ocean Energy Brief* Nos. 1 and 2. Available online at http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=445

[106] See the discussion of Locke's approach in Barnes (n 30), at 30ff.

[107] See N. Matz-Luck, 'Planting the Flag in Arctic Waters. Russia's Claim to the North Pole' (2009) 2 *Göttingen Journal of International Law* 235-255.

transport, transfer of technology and so on. The meaning of "socially productive" is open to debate, but potentially wide in definition. It could include conservation. In part this is reflected in the conservation and management duties of the coastal State over living resources of the EEZ.[108] It is not clear that any such legal requirement of productive use applies to energy resources, and this is something to consider further, especially in the face of increasing pressure on limited energy supplies.[109] This emphasis on socially productive effort provides another interesting avenue to explore, since most productive activities concerning energy capture and use are conducted by a multiplicity of actors, public and private, and whose actions might be attributed to a range of States, not merely the State hosting the raw materials or production facilities.[110] This may provide a counterpoint to simplistic accounts of "State directed" labour and reward for energy production, and one which justifies a broader stake in the products of offshore energy developments. This is particularly so given that improvements might be the product of efforts beyond a single State, such as the building of networks of supply lines, or the creation of market and regulatory regimes at the international level. If a "reward" is given for socially productive effort, then this might also provide a moral basis for more cooperative approaches to energy use and supply, and shared interests in energy resources. This is highly relevant to marine renewable energy, where complex physical and market networks are required to ensure that energy can be captured when available and then distributed to those with the ability to use it.

This brief outline indicates the potential for analysing questions of energy sovereignty and control of marine resources in terms of property justifications. It does not explore the full implications of this approach, and there are many interesting questions that remain to be asked. For example, one might ask how the Lockean proviso that requires enough and as good be left for others might be applied to claims by some States to exclusive control over globally important energy reserves. Neither does this article consider other important justifications, such as liberty, identity, utility or efficiency, good order. Such approaches open up many more questions about how we should allocate control over energy resources, and in what forms, to States (or indeed to other actors). It is clear that if we are to take claims about energy sovereignty seriously, and to consider how these can and should be advanced, much more work is required to frame the terms of the debate.

[108] See for example LOSC, Articles 61-2.

[109] See D. Ong, 'Towards and International Law for the Conservation of Offshore Hydrocarbon Resources within the Continental Shelf?' in D. Freestone, R. Barnes and D. Ong (eds), *Law of the Sea. Progress and Prospects* (Oxford University Press, Oxford, 2006) 93-119.

[110] On private actors, see further S. Trevisanut, 'The Role of Private Actors in the Offshore Energy Industry: Shifting Models of Participation'(2014) 29(4) *International Journal of Marine and Coastal Law* XX-XX, this issue.